Engaging Thurston County Residents in Oregon Spotted Frog Conservation

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CONTENTS

EXECUTIVE SUMMARY

Overview

- This project was led by the Thurston Conservation District with collaborative support from Washington Department of Fish and Wildlife, the U.S. Fish and Wildlife Service, and people living in Thurston County. Funding for this project was provided by the Chehalis Basin Strategy's Aquatic Species Restoration Plan (Grant no 24-2427).
- The goal of this project was to better understand and advance habitat stewardship for Oregon spotted frog (OSF) on privately held lands. Our primary goals were to start trust-building dialogues with residents in the region to:
    - Increase public awareness and participation in ongoing conservation efforts.
    - Gain a better understanding of public preferences, concerns, and barriers regarding OSF conservation to inform habitat stewardship programs.
    - Build local capacity to support OSF conservation across the local landscape.

Project Highlights and Outcomes

- The willingness of Thurston County residents to enroll in an OSF conservation program are primarily driven by broad-based beliefs about endangered species, as well as specific attitudes towards OSF. These attitudes were further defined by direct experiences with the Federal Government and knowledge of OSF from having the species on their property.
- Our research challenged the assumptions that financial support is the primary motivator for conservation on private lands. Instead, our findings show that regulatory assurance, program clarity, and decision-making opportunities may also increase willingness to participate in OSF conservation.
- Education and engagement opportunities during this project initiated high interest from the local community, leading to an increase in productive conversation with private landowners and property site visits and OSF surveys from technical service providers.
- Survey respondents expressed concern about partnering with local conservation agencies on OSF conservation and cited that an increase in trust and respect was needed to build better relationships. Thurston Conservation District and Washington Department of Fish and Wildlife were identified as the top two entities community members were interested in working with.
- This report highlights the need to create a program that fits the needs of Thurston County residents, including (1) increasing knowledge through engagement opportunities, (2) building trust, and (3) and lays out first steps to further engage with residents in this region.

Habitat Suitability Model

- The habitat suitability model was designed by U.S. Fish and Wildlife Service staff to identify and prioritize parcels within the Black River watershed for OSF conservation.

The habitat suitability model provided a baseline of potential habitat for ecological feasibility and supported the premise that private lands are vital to any OSF conservation efforts in Thurston County.

Educational Workshop and Outreach Material

- Thurston Conservation District, in collaboration with U.S. Fish and Wildlife Service Partners for Fish and Wildlife Program held an educational workshop for the local Black River Basin community. This workshop shared the basics of OSF including life cycle, habitat, threats, and conservation strategies.
- During this project, the Thurston Conservation District created wooden grazing sticks designed for farmers who are grazing OSF habitat. A printed and laminated diagram that describes how to successfully use the stick was created (see Appendix C). These two tools are specifically designed for agricultural producers who are working directly with a technical expert.
- As a component of this project, the Thurston Conservation District created a metal OSF Habitat sign that can be displayed by Thurston County residents in OSF conservation project locations (see Appendix C).

Listening Sessions

- Thurston Conservation District and U.S Fish and Wildlife Service Partners for Fish and Wildlife Program held an in-person listening session for Thurston County residents. Participants were asked a series of facilitated questions that began with sharing broader views of landscape values (e.g., what is important to them about the land they live on), reflection on conservation barriers and motivations, and recommendations for conservation programs in the region.
- During the listening session, participants shared a large range of questions, thoughts, and concerns. The feedback obtained from this session pointed to the importance of effective and continuous communication between landowners and practitioners. Participants also shared strong concern about current and future regulation and regulating entities.

Community Survey

- The community survey was conducted to understand Thurston County residents' concerns, preferences, and barriers regarding OSF conservation.
- The survey methodology was established by a committee of biologists, social scientists, and communication specialists from the Thurston Conservation District, Washington State Department of Fish and wildlife, and U.S. Fish and Wildlife Service.
- A direct mailing including the survey questionnaire was sent to residents in targeted areas based on the habitat suitability map for OSF. Participants returned the survey via mail to the Thurston Conservation District. A link to the survey was provided on each direct mailing, and some participants responded online.
- Of the 664 addresses, 61 participants responded. The return rate of this survey was approximately 11%.

1. BACKGROUND

Washington State hosts an amphibian species with a dwindling population, the Oregon spotted frog (*Rana pretiosa*) (OSF). This species is federally listed as threatened and listed as endangered in Washington State (Department of the Interior Fish and Wildlife Service, 2016). This species' once extensive habitat range is now isolated to a handful of drainages in Washington and Oregon State. Thurston County, Washington contains the Black River Basin, one of the few basins where OSF populations can still be found (Figure 1; U.S. Fish and Wildlife Service, 2023; Hallock, 2013).

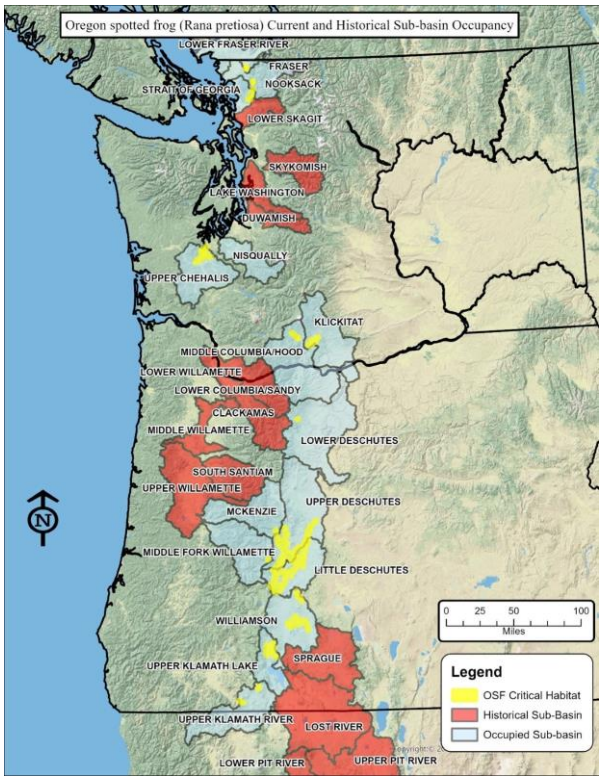


Figure 1. OSF current and historical sub-basin occupancy (U.S. Fish and Wildlife Service, 2023)

OSF are a medium sized frog in the *Rana* genus. This species is highly aquatic, almost entirely relying on water for travel between seasonal habitats (Hallock, 2013). For this species to successfully reproduce, specific habitat requirements must be met. Aquatic habitat is necessary for breeding, oviposition, and embryotic development. Specifically, this species needs seasonally shallow inundated areas with little shade from surrounding vegetation. These specific conditions can result in successful reproduction, however very few OSF make it fully to adulthood. It is estimated that only 1% of eggs survive metamorphosis (Licht, 1974).

For many years, OSF populations have been dwindling. Species reproduction challenges are caused by the loss of ideal habitat due to land conversion, alteration of permanent waters, invasion of non-native species, and a loss of natural disturbances. Over the last 100 years, the loss of historic indigenous land management techniques, specifically burning, is thought to play a significant role in the loss of open seasonal wetlands in the Thurston County region (Hallock, 2013). Additionally, Euro-American settlers developed surrounding landscape, oftentimes for agricultural purposes. This resulted in significant alterations to the hydrology of many locations in this region (Elmore and Kauffman, 1994). Over the past century and into more recent years, Thurston County is continuing to develop rapidly, and significant freshwater wetland loss has occurred throughout the Puget Sound region (Thurston County, 2022). This, in combination with the introduction of invasive species like the American bullfrog (*Lithobates catesbeianus*) and Reed canary grass (*Phalaris arundinaceous*), has significantly threatened primary OSF habitat and resulted in what experts believe to be significant OSF population loss (Hallock, 2013).

There are several documented OSF populations in Thurston County. Some of these heavily monitored populations exist on state or federally owned property. However, many OSF populations also reside on private property (Hallock, 2013). Some landowners allow various agency staff to monitor populations on their property, others do not allow regulatory agencies on their property, and more are unaware their property could be home to an unidentified OSF population (Hallock, 2013; Langpap, 2004). Additionally, conflicts between the management of endangered species and private property rights can lead to Endangered Species Act (ESA) listed species conservation and recovery effort challenges. Some landowners may fear the restrictions, regulations, or potential litigations connected to ESA listed species (Langpap, 2004). This socio-ecological conflict can result in a lack of knowledge about population numbers and locations and hinder collaborative recovery strategies.

Agencies and organizations across multiple scales, such as the U.S Fish and Wildlife Service and Washington Department of Fish and Wildlife are employing many strategies to support species conservation in the region (Hallock, 2013). In Thurston County, the Chehalis Basin Strategy's Aquatic Species Restoration Plan (ASRP), a restoration funding program, lays out ambitious goals for the recovery and conservation of OSF in the Black River watershed (Aquatic Species Restoration Plan Steering Committee, 2019). One of the recovery strategies being explored through the ASRP is OSF species translocation onto privately held land (Lambert, 2024). To identify whether this strategy could be effective in Thurston County it is first vital to understand the communities' feelings and views about OSF and conservation actions associated with the species. Information about communities can be gathered through targeted surveys, one-on-one conversations, and structured group listening sessions (Bennett et al., 2024; O'Brien et al., 2021). This strategy gives agencies and organizations information on current behaviors and opinions as well as what would motivate or inhibit private landowners to consider monitoring, or restoration and conservation efforts on their property (O'Brien et al., 2021).

Overall, the primary goal of our project is to provide Thurston County residents with the opportunity to contribute input about OSF conservation in Thurston County. This information is a vital first step to understanding the feasibility of future conservation strategies, including species translocation on private properties in Thurston County.

2. HABITAT SUITABILITY MODEL

2.1 Purpose

The habitat suitability model is designed by staff from U.S Fish and Wildlife Service to identify and prioritize parcels within the Black River watershed for the OSF. By evaluating factors such as land use, habitat quality, adjacency to priority lands, and OSF occupancy, the model helps determine which areas are most suitable for supporting and expanding OSF populations. This tool provides a structured approach to guide habitat enhancement, restoration, and potential translocation efforts, ensuring that conservation activities are focused on the most promising areas for OSF conservation efforts.

2.2 Methods

The habitat suitability model was intended to be flexible, allowing for easy changes and the integration of additional data. The model currently contains five sub-models, each representing a category: (1) Land Use, (2) Habitat, (3) Adjacency to Priority Lands, (4) Species Presence, and (5) Adjacency to Species Presence. Criteria within each sub-model were assigned a value based on their significance in supporting OSF, categorized as Low, Medium, High, or Very High, with corresponding weights of 1, 5, 10, or 15. At the sub-model level, both a relative value and relative weight were assigned to each category. Subtotal scores for each sub-model were calculated by summing the products of the weights and relative weights of the categories. The total score was calculated by summing all subtotals, representing the overall habitat suitability measure (Table 1).

Table 1. Structure of the Habitat Suitability Model						
Category	**Criteria**	**Value**	**Weight**	**Relative Value**	**Relative Weight**	**Final Weight (Weight x Relative Weight)**
Land Use	Existing Agricultural Use	Very High	15	Medium	5	75
	Long-Term Agriculture	High	10			50
	Open Space	High	10			50
					Subtotal	**175**
Habitat	OSF Proposed Critical Habitat	Very High	15	High	10	150
	Thurston Wetlands	Medium	5			50
	Tree Canopy Cover	High	10			100
					Subtotal	**300**
Adjacency to Priority Lands	Permanently Conserved Lands	Very High	15	Medium	5	75
	Lands Under a Conservation Agreement	High	10			50
					Subtotal	**125**
Species Presence	OSF Occupancy	Very High	15	Very High	15	225
					Subtotal	**225**
Adjacency to Species Presence	Within 1 km of OSF Occupancy	High	10	High	10	100
	Within 2 km of OSF Occupancy	Medium	5			50
	Within 5 km of OSF Occupancy	Low	1			10
					Subtotal	**160**
					Total	**985**

Table 1. Structure of the Habitat Suitability Model.

Land Use

In the Land Use sub-model, we included data on existing agricultural use from the Washington State Department of Agriculture (WSDA), as well as data on parcels zoned as Long-Term Agriculture (LTA) or classified under the Open Space Tax Program by Thurston County. Prior to scoring, we excluded any existing agricultural use data categorized as "Developed" or "Shellfish" from the WSDA dataset, as these areas were not considered to provide suitable habitat for OSF. Points were awarded to parcels based on the following conditions:

- Existing Agricultural Use: Parcels with more than 5% of their total area used for agriculture and that have a total area greater than 0.25 acres received 75 points.
- Long-Term Agriculture: Parcels where 50% or more of their total area is zoned as LTA received 50 points.
- Open Space: Parcels where 50% or more of their total area is classified under the Open Space Tax Program received 50 points.

Habitat

To develop the Habitat sub-model, we incorporated data on the proposed OSF critical habitat from the U.S. Fish and Wildlife Service (USFWS), wetland classifications from the National Wetland Inventory (NWI) through Thurston County, and tree canopy coverage from the Washington State Department of Fish and Wildlife (WDFW). The proposed OSF critical habitat provided a broader screening measure compared to the official critical habitat designation for the species. For wetland classifications, we focused on those identified as supporting suitable OSF habitat, specifically palustrine emergent (PEM) and palustrine shrub-scrub (PSS) types, including all their variants and combinations. This approach aimed at being more inclusive in assessing potential OSF habitat. Points were awarded to parcels based on the following conditions:

- OSF Proposed Critical Habitat: Parcels with any portion of their area intersecting with the OSF proposed critical habitat received 150 points.
- Thurston Wetlands: Parcels with any portion of their area intersecting with any of the following wetland classification types received 50 points: PEMf, PEM, PEM/EMf, PEM/SS, PEM/SSag, PEM/SSf, PEMA, PEMC, PEMCB, PEMCh, PEMCH, PEMFB, PEMfd, PEMfh, PEMF, PEMFH, PEMx, PSS, PSS/EM, PSS/EMf, PSSf, PSSCH, PSSd, PSSCB, PSSA, PSSC, PEMag, PEMag/EMf, and PSSag.
- Tree Canopy Cover: Parcels received 100 points if they had tree canopy covering 75% or less of their total area, or if they had at least 2 acres of their total area without any tree canopy.

Adjacency to Priority Lands

As part of the Adjacency to Priority Lands sub-model, we used data on permanently conserved lands from various sources, including USFWS, WDFW, Thurston County, Natural Resource Conservation Service (NRCS), Center for Natural Lands Management

(CNLM), Joint Base Lewis-McChord (JBLM) Sentinel Landscapes, and the National Conservation Easement Database (NCED). We also included data on lands under voluntary conservation agreements from the USFWS Partners for Fish and Wildlife (PFW) Program. Points were awarded to parcels based on the following conditions:

- Permanently Conserved Lands: Parcels located within 0.25 miles of permanently conserved land received 75 points.
- Lands Under a Conservation Agreement: Parcels located within 0.25 miles of land under a conservation agreement received 50 points.

Species Presence

To build the Species Presence sub-model, we incorporated data from the Priority Habitat and Species (PHS) database provided by WDFW, which included all confirmed OSF observations within Thurston County. Points were awarded to parcels based on the following conditions:

- OSF Occupancy: Parcels with any portion of their area intersected with an OSF observation received 225 points.

Adjacency to Species Presence

In the Adjacency to Species Presence sub-model, we used data from the Species Presence sub-model, which was derived from the PHS database provided by WDFW. Given that OSF has been documented to travel up to 4.8 km, we assessed distances within 1 km, 2 km, and 5 km of OSF observations. To avoid double-counting, parcels that already received points from the Species Presence sub-model did not receive additional points in the Adjacency to Species Presence sub-model. Parcels that included multiple OSF observations across different distances were awarded points only for the highest-scoring distance category. Points were awarded to parcels based on the following conditions:

- Within 1 km of OSF Occupancy: Parcels located within 1 km of an OSF observation received 100 points.
- Within 2 km of OSF Occupancy: Parcels located within 2 km of an OSF observation received 50 points.
- Within 5 km of OSF Occupancy: Parcels located within 5 km of an OSF observation received 10 points.

2.3 Results

A total of 12,356 parcels were scored by the model, with the total score ranging from 0 to a maximum of 725.

Most parcels fall within the Very Low and Low suitability categories, representing a substantial portion of the total acreage. Higher-scoring categories have fewer parcels, but the average parcel size increases significantly, reaching 69.6 acres in the Very High category compared to 11.8 acres in Very Low (Table 2).

Table 2. Distribution of Parcels by Suitability Category

Suitability Category	Count	Total Score Range	Total Acres (Sum)	Average Acres/Parcel
Very Low	4,521	0 - 145	53,400.5	11.8
Low	7,022	146 - 290	47,332.0	6.7
Medium	616	291 - 435	11,653.3	18.9
High	150	436 - 580	4,597.7	30.7
Very High	47	581 - 725	3,271.7	69.6

Table 2. Distribution of Parcels by Suitability Category.

2.4 Future Use

This modeling tool scores individual parcels to assess habitat suitability for OSF. It can also be adapted for other regions and species, making it valuable for targeted conservation efforts. While the model is designed to evaluate habitat suitability for OSF, it can be adjusted to align with other conservation objectives for the species. The scoring can be modified, and data and sub-models can be added and removed, allowing the model to be flexible for various needs. Ground truthing will be essential for refining the model, verifying its accuracy, and ensuring it functions as intended. This model will continue to be modified and adapted into the future to prioritize potential OSF habitat and guide future enhancement, restoration, and translocation efforts.

3. EDUCATIONAL WORKSHOP

On May 24th, 2023, Thurston Conservation District and the Partners for Fish and Wildlife Program of the U.S. Fish and Wildlife Service held an in-person workshop for residents. Participants were invited via a targeted mailing based on the criteria outlined in Survey Methods (see page 13 of this document). This event was also publicized on the Thurston Conservation District's social media accounts and in the monthly newsletter. Direct invitations were also sent to community members who were already engaged in this topic or had expressed interest in the past.

The purpose of the educational workshop was to provide baseline knowledge about OSF natural history and conservation efforts to participating community members. The goal was to provide a basic understanding of the OSF lifecycle, habitat needs, threats, and potential conservation strategies. Information was shared in a presentation style with ample time for participant questions afterwards. During the presentation, speakers also introduced the idea of species translocation and gauged participants' reactions. Attendees did not share initial concerns with the idea of translocation, but rather had questions regarding permitting building structures and invasive weed management.

This workshop also resulted in direct connection between technical assistance providers and residents who may have OSF on their private property. These initial contacts ultimately resulted in a number of site visits to residents' properties and created continuing relationships.

4. LISTENING SESSIONS

On January 4th, 2024, Thurston Conservation District and the Partners for Fish and Wildlife Program of the U.S. Fish and Wildlife Service held an in-person listening session for local residents. Participants were invited via a targeted mailing based on the criteria outlined in Survey Methods (see page 13 of this document). This event was also publicized on the Thurston Conservation District's social media accounts and monthly newsletter. Direct invitations were also sent to community members who were already engaged in this topic or had expressed interest in the past.

16 members of the public attended the listening session. Participants were asked to self-identify on a spectrum of "I know very little about the OSF or this is a brand-new topic" to "I know a lot about the OSF or I'm performing OSF conservation on my property". Based on their response, participants were split in half to form two groups: (Group A) attendees with less or no knowledge or awareness about OSF conservation, and (Group B) participants with more extensive knowledge about OSF conservation. Within these two groups, participants were asked a series of facilitated questions related to OSF conservation:

1. *What do you value the most about your land?*
2. *What might limit your ability or interest in participating in OSF conservation on your property?*
3. *What would motivate or incentivize you to participate in an OSF conservation program or project?*
4. *Do you have any feedback that we can share to help develop a program that supports landowners and OSF?*

These questions were meant to capture a range of local perspectives, including broader views of landscape values, reflection on conservation barriers and motivations, and recommendations for conservation programs in the region.

Results from Question 1: What do you value the most about your land?

During the listening session participants were asked what they value most about their land. Monetary value was of top importance within both Groups A and B. Those with a lower awareness level (Group A) placed a higher value on the decision-making authority they had over their land. Those who had a higher awareness (Group B) level also placed value on the ecological function of their property (Table 3).

Table 3. Landscape Values			
Theme	**Count**		
	Group A	**Group B**	**Total**
Economic benefits (instrumental goods and services) "Monetary value" "The ability to use its resources, eg hunting" "Agriculture, timber, X-mas trees" "Resource for the community"	1	3	4
Ecological function "Reforestation" "Wildlife corridors" "Diversity and fertility"	0	3	3
Aesthetics "It's unique" "It's beautiful"	1	1	2
Decision making authority "It's ours" "My ability to make changes"	2	0	2
Intrinsic value "It talks to me" "Interconnection"	0	2	2
Undeveloped, open space	0	2	2
Health	0	1	1

Table 3. Responses from listening session capturing landscape values grouped into major themes for Group A (lower OSF knowledge) and Group B (higher OSF knowledge).

Results from Question 2: What might limit your ability or interest in participating in OSF conservation on your property?

Interest level or willingness to participate in an OSF conservation program is heavily limited by a perceived concern about regulation and regulating entities. This concern scored highest among both awareness level groups and was a reoccurring theme throughout the entirety of this project. Participants who had a higher awareness also expressed that existing programs are not compatible with their needs (Table 4).

Table 4. Interest Level and Willingness to Participate in OSF Conservation

Theme	Count		
	Group A	Group B	Total
Concerns About Regulation or Regulatory Entities "Outdated or inflexible federal regulations" "Agreements with Government" "Unintended consequences with the regulatory arms of Government (Thurston County)" "Regulation and the constant changes" "General distrust of regulatory agencies" "USFWS and Thurston Co. having different ideas" "Fear of the 'mitigation shake down'" "Frustration towards county regarding a months-long delay in issuing a permit."	4	5	9
Existing Programs are Incompatible "Incompatible easement terms" "Conflicts with existing FSA contracts (BMPS)" "Implementation, may want more support from CDs" "Few practical cost-share programs" "Outdated or inflexible federal regulations"	0	5	5
Economic Impacts "Compensation, or lack of." "Money and time" "Impacts from development"	2	1	3

Knowledge and Understanding "Knowledge of how to manage land" "Lacking some knowledge, knowledge gaps, not knowing what it entails "Unsuitable land for OSF"	1	2	3
Decision making authority/property restrictions "Restrictions that may limit the completion of beneficial actions on the property" "Ability to manage water and land"	1	1	2
Impacts to Legacy "Concern for future legacy"	1	0	1
Not Interested "Default is no"	0	1	1

Table 4. Responses from listening session capturing interest level and willingness to participate in an OSF conservation program grouped into major themes for Group A (lower OSF knowledge) and Group B (higher OSF knowledge).

Results from Question 3: What would motivate or incentivize you to participate in an OSF conservation program or project?

When discussing what participants would need from a program or responsible agencies, participants shared a wide variety of needs including implementation and technical support, economic support, research and scientific backing, and program flexibility and ease. This showcases the need for diverse program structure (Table 5).

Table 5. OSF Conservation Participation Motivators

Theme	Count		
	Group A	Group B	Total
Implementation and Technical Support "Knowing what to do, expert support" "Someone to do the work" "More organizational support" "Someone to explain the legal ramifications of the agreement"	2	2	4

Economic Support "Money!" "Money - incentives such as lower property taxes" "Support for local land trusts, such as a fundraiser or other event"	2	1	3
Research and Science Backing "More research" "Scientific testing and validation that we are doing the right things"	0	2	2
Trust and Communication "A better feeling of trust between landowners and officials" "Clear success markers and time frames"	1	1	2
Program Flexibility and Ease "Adaptive plans that are flexible and do not lock the landowner in if something changes over time" "An easier permitting process"	1	1	2
Decision making authority "Feeling as though I'm a part of the stewardship process"	1	0	1
Security "Security in the fact that my home/land/finances will be safe should I have an endangered species present"	1	0	1
Regulatory Assurance "Legal Shield: USFWS could partner with the county should any legal issues arise in the future"	0	1	1

Table 5. Responses to questions capturing OSF conservation participation motivators or needs grouped into major themes for Group A (lower OSF knowledge) and Group B (higher OSF knowledge).

Results from Question 4: Do you have any feedback that we can share to help develop a program that supports landowners and OSF?

When participants were asked to share feedback about what they need broadly a major theme among the group with a higher awareness level emerged. This group stated clearly that a program focused on improving landowner communication and relationships would be the best way to support residents and OSF conservation in the region. Those in the group with the lower awareness level shared that program clarification and simplification would be beneficial (Table 4).

Table 6. Desired Program Features and General Program Feedback

Theme	Group A	Group B	Total
	Count		
Landowner Communication and Relationships "Need clear communication about target habitat goals and where we are with those goals" "Find common ground" "Returning calls promptly, responsiveness, and scheduling face to face meetings" "Site visits mean the world to producers" "Regulatory partners should recognize progress is not a snapshot in time nor linear" "Trust opens more doors than regulation" "Communications training, specific to county integration" "Listening directly to landowners and their needs"	0	8	8
Cross-agency Coordination "Strong support for CDs, land trust, and Fish and Wildlife" "Coordination between agencies" "Recognizing where the expertise lies"	1	2	3
Program Clarification and Simplification "Thurston County overregulates and is unclear on regulations, restrictions, and causes confusion." "Make things simpler"	2	0	2

Sharing Successes "Hearing about successful instances of a public-private interactions or projects" "Show success stories"	0	2	2

Table 6. Responses from listening session capturing desired program features and general program feedback grouped into major themes for Group A (lower OSF knowledge) and Group B (higher OSF knowledge).

5. COMMUNITY SURVEY

5.1 Purpose

The community survey was conducted to better understand Thurston County residents' concerns, preferences, and barriers regarding OSF conservation. Specifically, the survey gathers data on how Thurston County residents think about managing habitat that is present on their private properties. It was designed to help us to understand feelings and identify potential barriers and motivators that factor into resident behavior when managing their property in relation to protecting endangered species like OSF.

5.2 Methods

The survey methodology was established by a committee led by Washington State Department of Fish and Wildlife staff and included members from the Thurston Conservation District and U.S. Fish and Wildlife Service (including the Partners for Fish and Wildlife Program and the Science Applications Program). Survey data was collected using multiple choice forms, open-ended questions, and Likert scale questions. The survey asked participants questions about their property, motives, and opinions about conserving endangered species like OSF. A copy of the survey questionnaire is available in Appendix A and a list of written questionnaire responses can be found in Appendix B.

A direct mailing including the survey questionnaire was sent to residents in targeted areas. Targeted areas used for parcel selection were determined by spatial data from the U.S. Fish and Wildlife Service. In particular, parcels were selected from the proposed critical habitat of the OSF and data from the Thurston County GeoData Center for wetlands within Thurston County. Parcels were chosen based on their intersection with either the proposed critical habitat or specific wetland types delineated in the National Wetland Inventory (NWI) within the Black River watershed. The selected NWI types included various palustrine emergent wetland classifications, including PEMf, PEM/EMf, PEM/SSf, PEMfd, PEMfh, PSS/EMf, PSSf, and PEMag/EMf. Parcels owned by the state were removed, as well as those with out-of-state addresses. In total, 664 parcels met these criteria and received a survey in the mail. Participants could choose if they wanted to return the survey via mail to the Thurston Conservation District or through an online questionnaire via Jotform.

Of the 664 addresses, 61 participants responded. The return rate of this survey was approximately 11%.

5.3 Descriptive Results

5.3.1 Who participated?

Respondents were asked to self-report their sociodemographic information as part of the survey questionnaire, including age, gender, racial, cultural and ethnic background, and education level (Table 7). Results showed that 61% of respondents identified as male while 29% identified as female. Survey respondents also identified their racial, cultural, and ethnic background which included white (90%), American Indian or Alaska Native (2%),

Mexican, Mexican American (2%), Native Hawaiian or Pacific Islander (3%), Black or African American (0%), and Asian (3%). Respondents were also asked to describe their occupation, which included retired (23%), healthcare (19%), IT/Finance/administration (12%), education (11%), agricultural (9%), construction (7%), and environmental (7%).

Table 7. Demographics		
Value	**Count**	**Frequency**
Age [M=1959.82, SD= 15.11]	-	-
Gender		
Male	35	61%
Female	22	39%
Non-binary	0	0%
Racial, Cultural, and/or Ethnicity		
White	52	90%
American Indian or Alaska Native	1	2%
Mexican, Mexican-American, Chicano, Latinx	1	2%
Native Hawaiian or Pacific Islander	2	3%
Black or African American	0	0%
Asian	2	3%
Describe (Other)	n/a	n/a
Education Level		
Some high school	0	0%
High school graduate or GED	15	24%
Two-year degree	4	6%
Bachelor's degree	18	29%
Master's degree	14	22%
Doctorate degree	5	8%
Professional or vocational certification	7	10%
Occupation		
Retired	13	23%
Healthcare	11	19%
IT/Finance/Administration	7	12%
Other	7	12%

Education	7	11%
Agriculture	5	9%
Environmental	4	7%
Construction	4	17%

Table 7. Count and Frequency (%) of survey participants age, gender, education level and racial, cultural, and/or ethnicity.

5.3.2 Property Information and Values

Respondents were asked to identify their property size (Table 8) and major distinguishing features related to OSF conservation (Figure 2). Most respondents identified as homeowners (56%) who have more than 10 acres (45%) and live near a wetland (43%) and stream or river (44%).

Table 8. Property Information		
Property Size	**Count**	**Frequency**
Less than 1 acre	2	3%
1-5 acres	19	32%
5-10 acres	12	32%
> 10 acres	27	45%

Table 8. Property size categories and frequency (%) identified by survey participants.

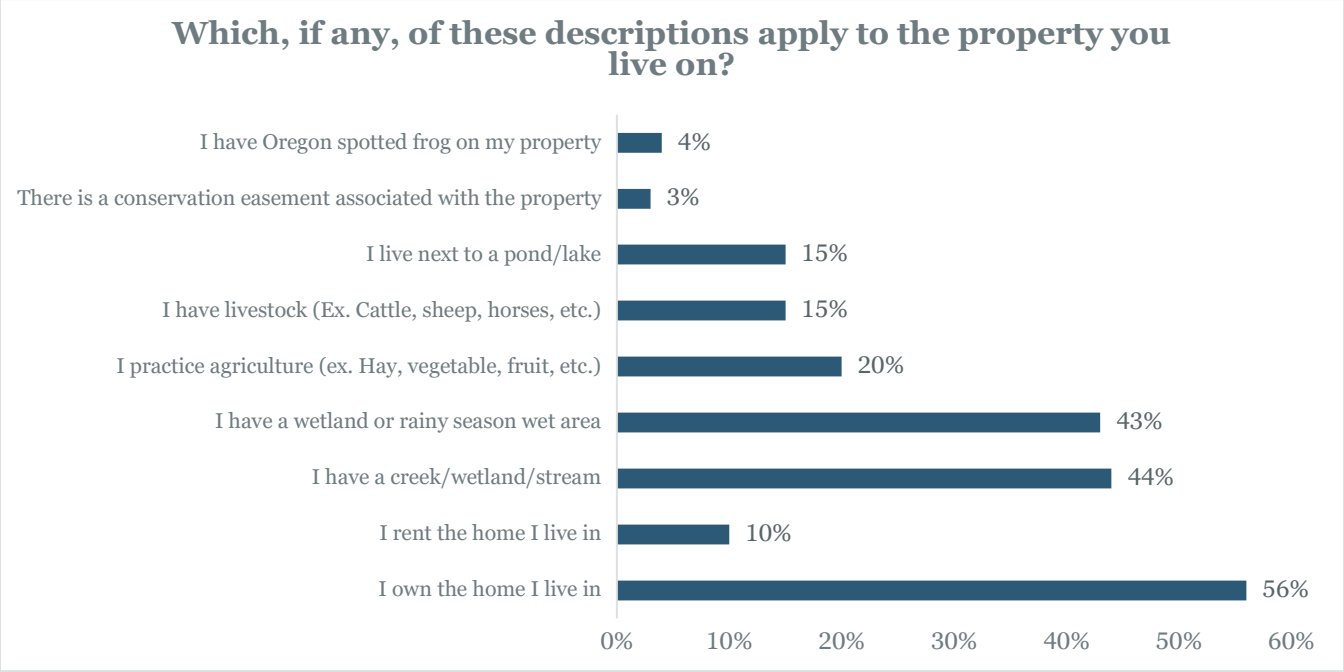


Figure 2. Survey response results (%) regarding residents' property type and features.

After describing their property, respondents were also asked to reflect on why the area they lived in is special. This indicates their landscape values. Landscape values reflect the relative importance or meaning of a place assigned across individuals, communities, and regions—and as such can act as underlying drivers of land management preferences and decisions (Brown 1984). Respondents were asked which landscape values they prioritize when making decisions regarding their land. Results indicated that environmental health and maintaining a safe, comfortable home were most important to them, whereas recreation and monetary benefits were least likely to affect their land management decisions (Figure 3).

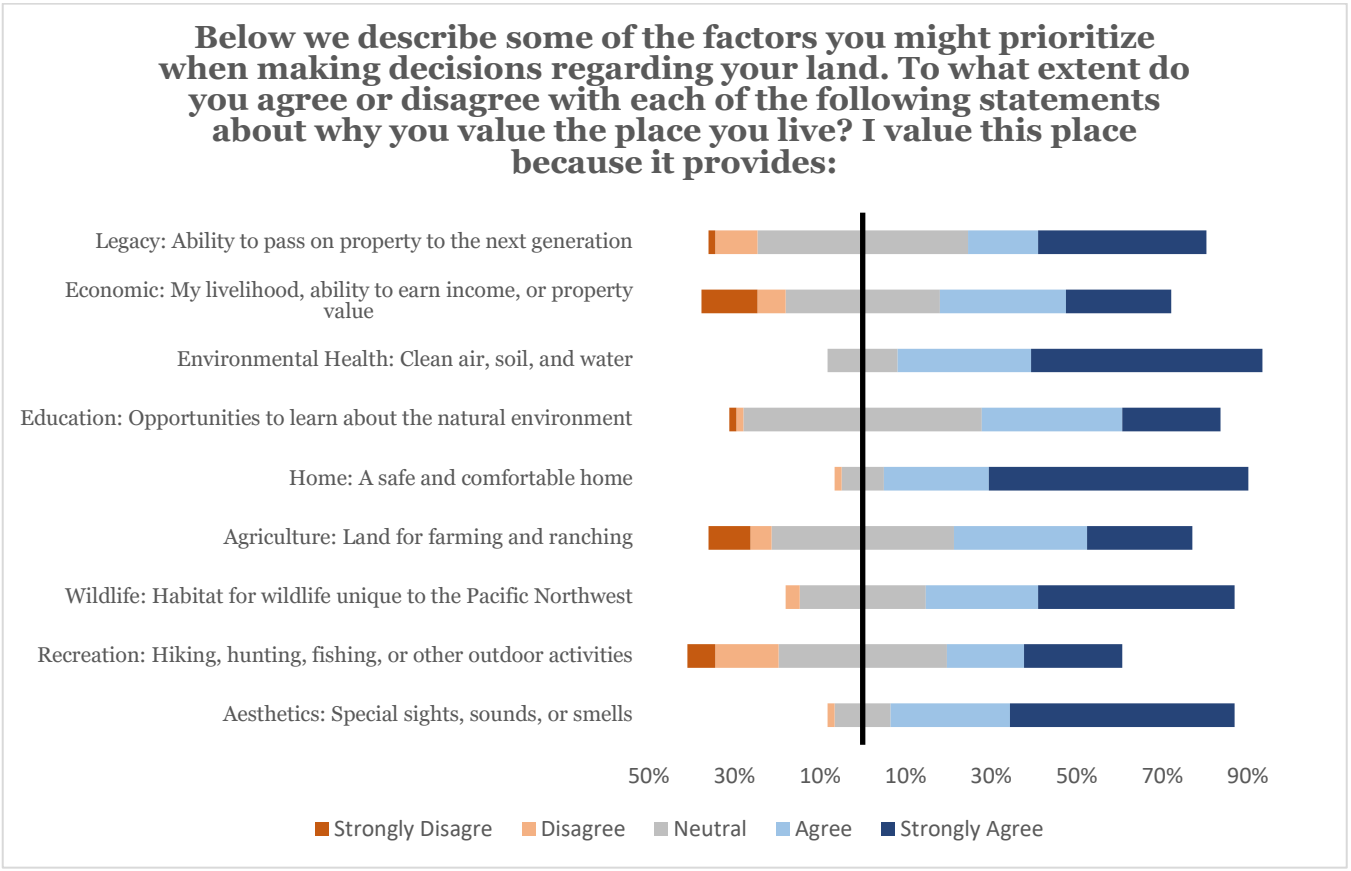


Figure 3. Survey response results (%) regarding factors residents prioritized when making decisions regarding their land.

Respondents were then asked to reflect on their perceptions of how a listed or endangered species—such as OSF—might impact the aspects of their property that were important to them, such as environmental quality or property value (Table 9). Results show that survey participants feel that having an endangered species on their property would increase their interest in improving the habitat quality of their landscape, for the benefit of the species. Respondents also shared that they felt their property already contained healthy habitat (29%). Results also showed the next largest perceived impact would be their ability to make decisions regarding their property. There was shared concern that their decision-making authority would be removed or negatively impacted (27%).

Table 9. Endangered Species Impact on Property		
Theme	**Description**	**Frequency**
Stewardship and Habitat Enhancement	Respondents shared that having an endangered species on their property would increase their interest in improving their landscape for habitat value. Or they shared their property already is healthy and beneficial habitat.	29%
Decision Making Authority	Respondents expressed concern that having an endangered species on their landscape would hinder or remove their ability to make decisions regarding their property,	27%
Property Value	Participants shared concern that having endangered species on their property would decrease their property value by limiting development, agricultural activities, and timber harvest.	26%
Property Rights	Respondents expressed concern that having an endangered species on their property would limit their ability to use their property in the way they chose or had the right to.	22%
No Affect	Respondents shared that having endangered species on their property would not affect any aspect of their property.	16%
Agricultural and Timber	Participants expressed that having an endangered species would limit their ability to engage in agricultural activities or harvest timber on their property.	11%
Other	Some participants shared sentiments that were not categorized. These comments ranged from sharing that OSF exists on their property to an interest in removing OSF from their habitat.	9%
Privacy	Participants shared concern that having an endangered species on their property would increase their property access to agencies or organization monitoring or doing research.	3%
Future Generation	A participant expressed interest in passing their ecologically functioning property to future generations.	1%

Table 9. Themes, description of themes, and frequency of themes (%) identified by survey participants regarding the perceived impacts endangered species would have on their property. A transcription of written comments can be found in appendix B.

5.3.3 Conservation Knowledge and Attitudes

Survey respondents were asked a series of questions about their views and attitudes about wildlife species that are at risk of becoming extinct (Figure 4). Results showed that most survey participants had positive attitudes about the Endangered Species Act and felt it was important to protect endangered species. Results also reflected that respondents felt residents should be compensated for having an endangered species on their property,

however they do not feel that economic growth should be prioritized over endangered species.

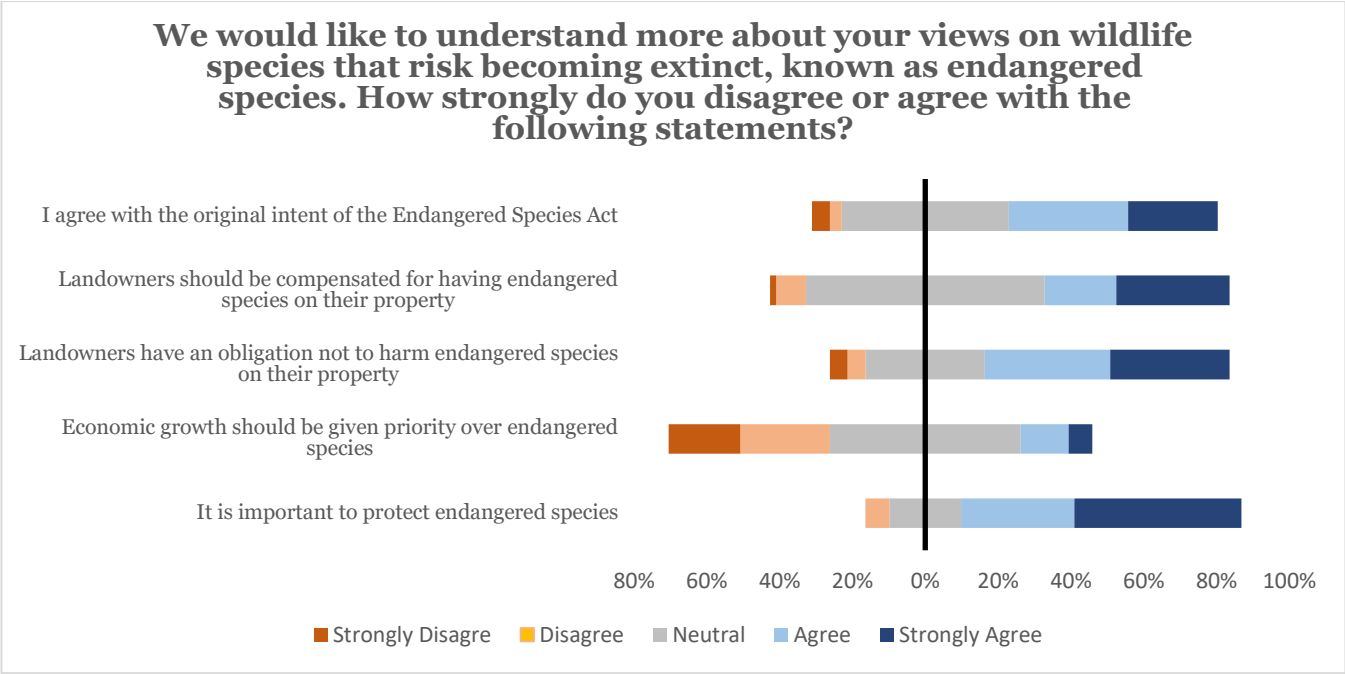


Figure 4. Survey response results (%) regarding residents' views about wildlife species that are at risk of extinction.

After reflecting on their attitudes about endangered species, respondents were also asked to share their attitudes specifically about OSF (Figure 5). Most survey participants responded positively to statements that conveyed positive sentiments about protecting OSF populations. Results also showed that having an endangered species, like OSF on private property would not be problematic for Thurston County residents.

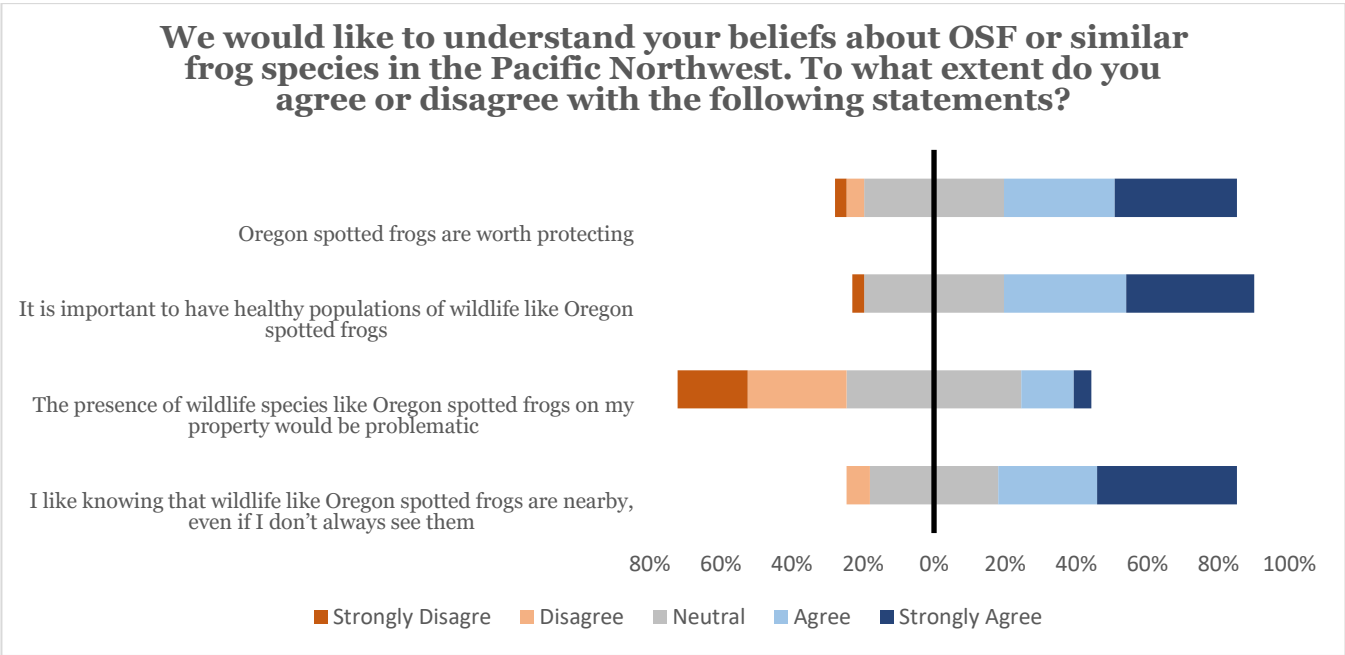


Figure 5. Survey response results (%) regarding residents' views and attitudes regarding OSF.

Participants were also asked about their likelihood of enrolling in an OSF relocation program (Figure 6). Most survey respondents expressed that it would be 'likely' or 'very likely' they would participate in such a program.

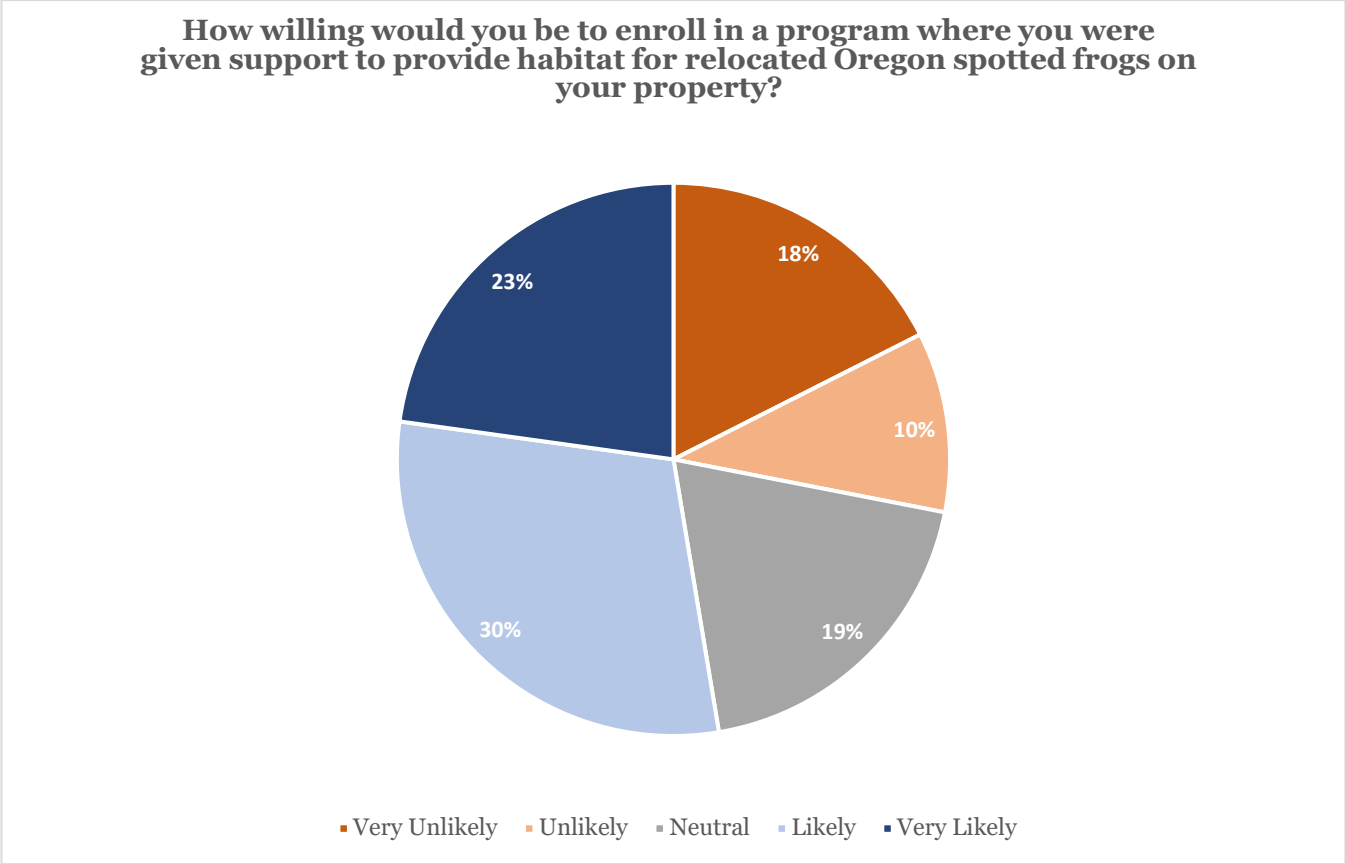


Figure 6. Survey response results (%) regarding willingness to enroll in a OSF conservation and translocation program

5.3.4 Willingness to Participate in a OSF Conservation Program

How do attitudinal, experiential, and sociodemographic factors relate to willingness to participate in OSF habitat programs?

We used a type of structural equation model (SEM) known as a latent variable path model to test the relationship between psychological, experiential, and sociodemographic data on willingness to enroll (Figure 7). We found that our hypothesized model fit the survey data to predict factors related to willingness to enroll (χ^2=64.52, P=0.39, CFI=0.99, TLI=0.99, $RMSEA$=0.03, $SRMR$=0.06).

Trust in the federal government was significantly related to broad attitudes towards the Endangered Species Act (R^2=0.36, γ=0.60, P<0.0001). In turn, attitudes towards the Endangered Species Act were strongly related to positive attitudes towards OSFs (β=0.90, P<0.0001), alongside familiarity—or knowledge—of the species to a lesser extent (β=0.21, P<0.005). Knowledge of OSF was related to residents' awareness of the species being present on their property (R^2=0.15, γ=0.39, P<0.003). Experiential awareness with the species on the property was also directly related to willingness to enroll in a habitat stewardship program (β=0.21, P<0.031), as well as attitudes towards OSF (β=0.21,

P<0.031). Surprisingly, sociodemographic factors, which can act as individual drivers in predicting participating in conservation actions, were not significantly related to willingness to enroll. Trust in the federal government and familiarity with the species were indirectly related through attitudes, but not directly related to enrollment willingness.

Overall, our model predicted 55% of the variation in respondents' willingness to enroll in a habitat stewardship program on privately held property. The drivers of willingness to enroll were primarily driven by attitudes, which were underlined by respondents' experiences with the Federal Government and OSFs. There are some particular nuances important for informing future programming that our model highlights. First, the effects of trust are cumulative on willingness to enroll in habitat programming for an endangered species. Although agency actions and decision making regarding any particular species happens independently and with different staff leads, residents often perceive these events collectively. Second, familiarity with OSF was a key factor in shaping positive attitudes of the species. Being mindful of awareness gaps—and providing resources to help garner interest through education and experiential opportunities—will be critical to the success of the program. The success of the workshops within this study further drive home this point. We saw the number of properties that the USFWS surveyed for OSFs on increase from 4 to 17 over the project duration, with all but 2 or 3 of the new sign ups linked to participation.

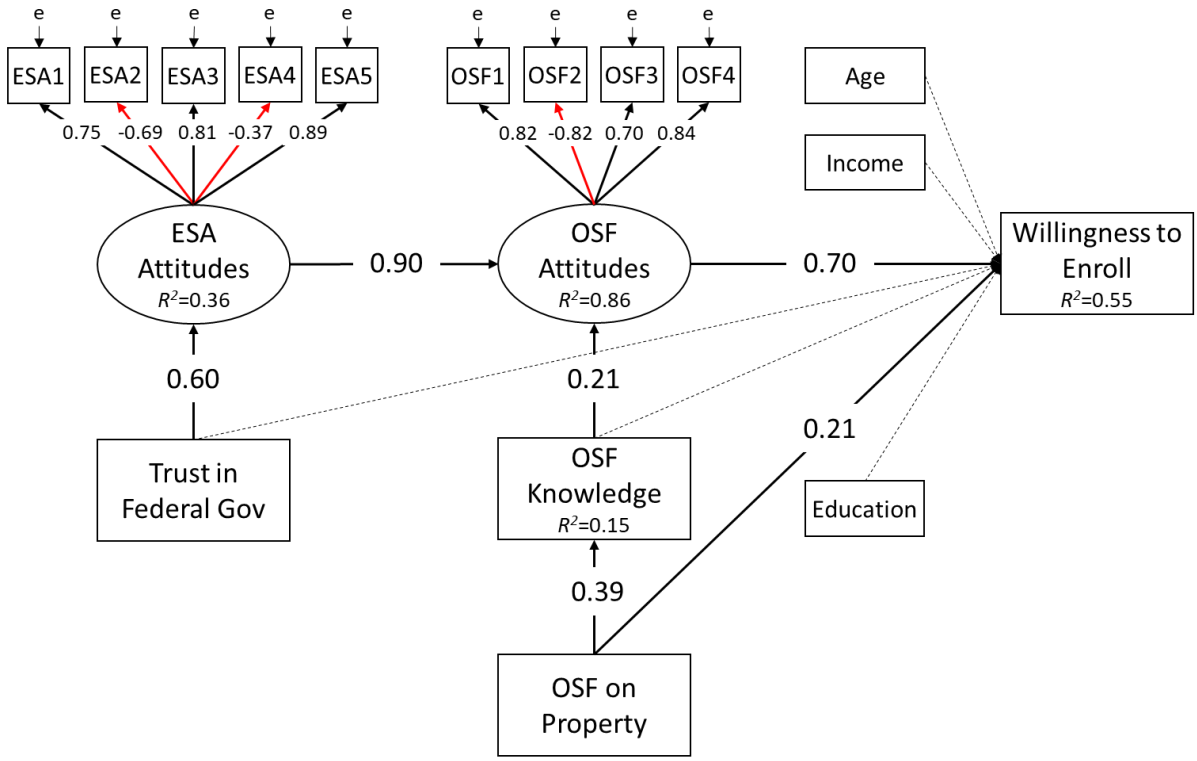


Figure 7: Results from a latent variable path model (SEM) of relationships amongst institutional trust in the federal government, broad and specific attitudes, knowledge, past experiences, and sociodemographic factors on residents' willingness to enroll in a habitat stewardship program for OSF. Circles represent latent variables. Dotted lines represent non-significant relationships at p<0.05 and red lines represent a negative association between variables.

Table 10. Latent Variable Path Model Label Code	
Label	**Corresponding Survey Question**
ESA1	It is important to protect endangered species.
ESA2	Economic growth should be given priority over endangered species.
ESA3	Landowners have an obligation not to harm endangered species on their property.
ESA4	Landowners should be compensated for having endangered species on their property.
ESA5	I agree with the original intent of the Endangered Species Act.
OSF1	I like knowing that wildlife like OSF are nearby, even if I don't always see them.
OSF2	The presence of wildlife species like OSF on my property would be problematic.
OSF3	It is important to have healthy populations of wildlife like OSF.
OSF4	OSF are worth protecting.

Table 10. Latent variable path model label coded variables and corresponding survey questions.

5.3.4 Motivations and Barriers for Stewardship Participation

What are the most significant barriers that would prevent participation in a program that aims to steward habitat for OSF?

Survey respondents were asked to identify the importance factors play in making land management decisions. Participants selected loss of property value, land use plans and goals, and concerns about regulations and laws as the most important factors (Figure 8).

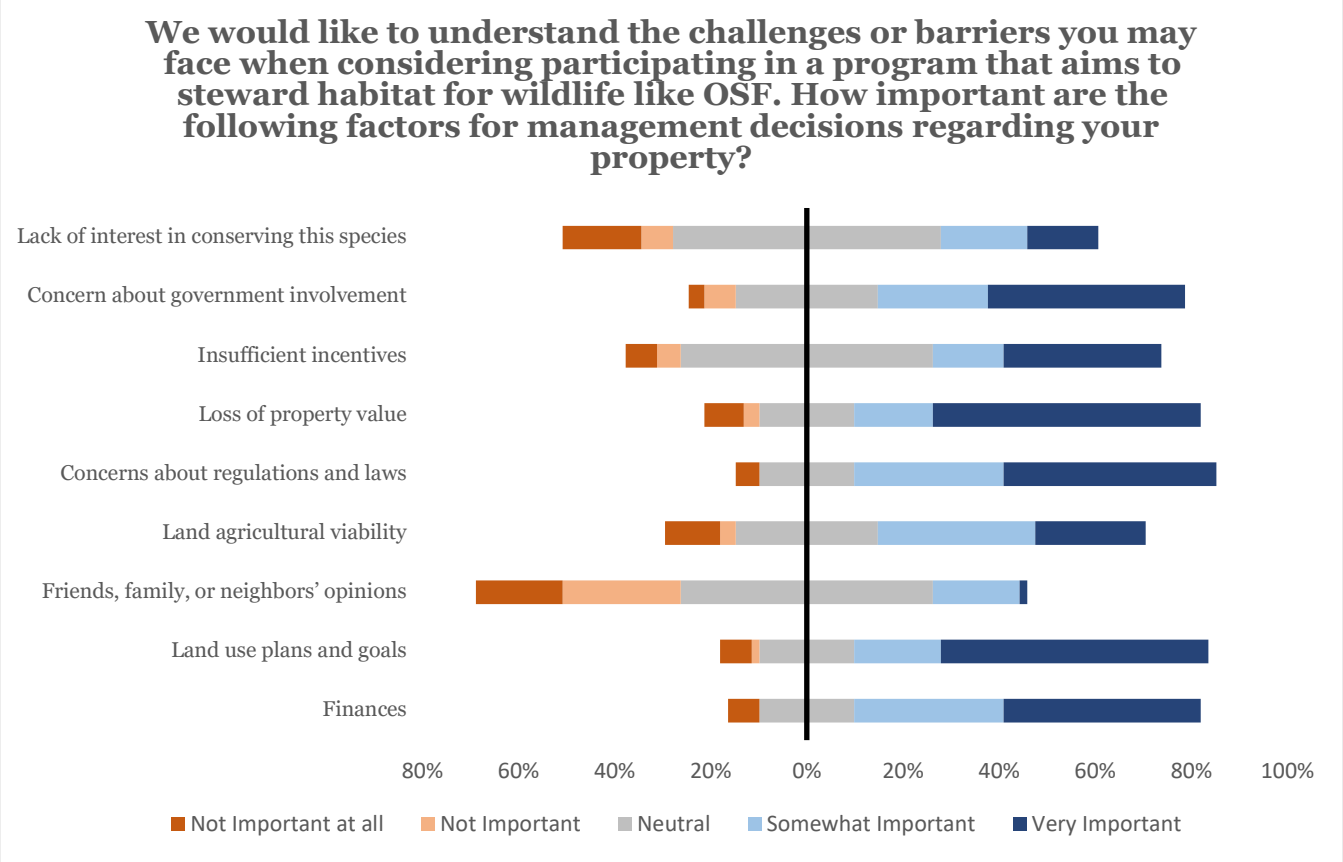


Figure 8. Survey response results (%) regarding challenges or barriers residents may face when considering whether to participate in an OSF conservation program.

Respondents were also asked to provide an open-ended response to identify the most significant barriers they experience. Participants identified loss of property rights (29%) and government involvement (16%) as the top two barriers to participating in an OSF conservation program (Table 9). These further underscores the desire residents have to retain decision making authority and the need for more effective collaboration and communication with government entities.

Table 9. Barriers for Stewardship Participation

Theme	Description	Frequency
Loss of Property Rights/ Land Use	Respondents shared that perceived loss of property rights would impact would inhibit their ability to participate in OSF conservation on their property.	29%
Government Involvement	Respondents shared that perceived government involvement would limit their interest in participating in OSF conservation on their property.	16%
Lack of Understanding	Respondents shared that they would need to have a stronger understanding of what was involved in an OSF conservation project before they could identify potential barriers.	9%

Loss of Privacy	Respondents shared that perceived loss of privacy would impact would inhibit their ability to participate in OSF conservation on their property.	4%
Loss of Agricultural Viability	Respondents shared that the perceived agricultural viability impact would inhibit their ability to participate in OSF conservation on their property.	4%
Not Suitable Habitat	Respondents shared that hey perceived their property would not have suitable habitat for OSF.	4%
Finances	Respondents shared that the perceived cost of project implementation or their lack of money would inhibit their ability to participate in OSF conservation on their property.	3%
Lack of Ability to Implement Project	Respondents shared that their physical limitations would inhibit their ability to participate in OSF conservation on their property.	1%

Table 9. Themes, description of themes, and frequency of themes (%) identified by survey participants regarding barriers and challenges faced when considering participating in an OSF conservation program. A transcription of written comments can be found in appendix B.

What program features would increase residents' willingness to be involved in an OSF conservation project?

Residents indicated an array of features would either make it easier for them to participate in an OSF habitat stewardship program or increase their likelihood of considering participation. Features perceived as important included: (1) regulatory and program clarity, (2) autonomy, and (3) implementation support. A clear understanding of regulations was selected as “very important” for 57% (n=34) of survey respondents, followed by the ability to make decisions and a clear understanding of the project goals and outcomes (each at 52%, Figure 9). Protection from future regulations and flexibility in program terms were also ranked highly. However, there was no one program feature that was viewed as a priority to an overwhelming majority of respondents. This again highlights the need to diversify both the structure and communication of a private lands’ habitat program.

Respondents were also asked to provide an open-ended response to identify what program features would be beneficial. Respondents identified the need for a program that allows for a strong understanding of the intended outcomes (29%) and a plan to retain property rights (11%) (Table 10).

Interestingly, the marked importance of property value amongst respondents did not necessarily translate to money as a motivating program feature. Factors related to financial or technical support were ranked as having lower importance amongst the suite of potential program features. Tax credits, annual cash payments, and one-time payments were the three least important features identified by survey respondents. The lack of focus on financial assistance may ultimately point to the ways people value retaining autonomy on their land. Ultimately, there may be a mismatch between the perceived loss of control or subsequent decrease in property value with the worth of any potential monetary

payments. However, there should be some caution in interpreting lower ranked features as unimportant, especially those related to financial and technical assistance. Instead, these may act as a secondary barrier to uptake after concerns related to program knowledge and property rights are addressed.

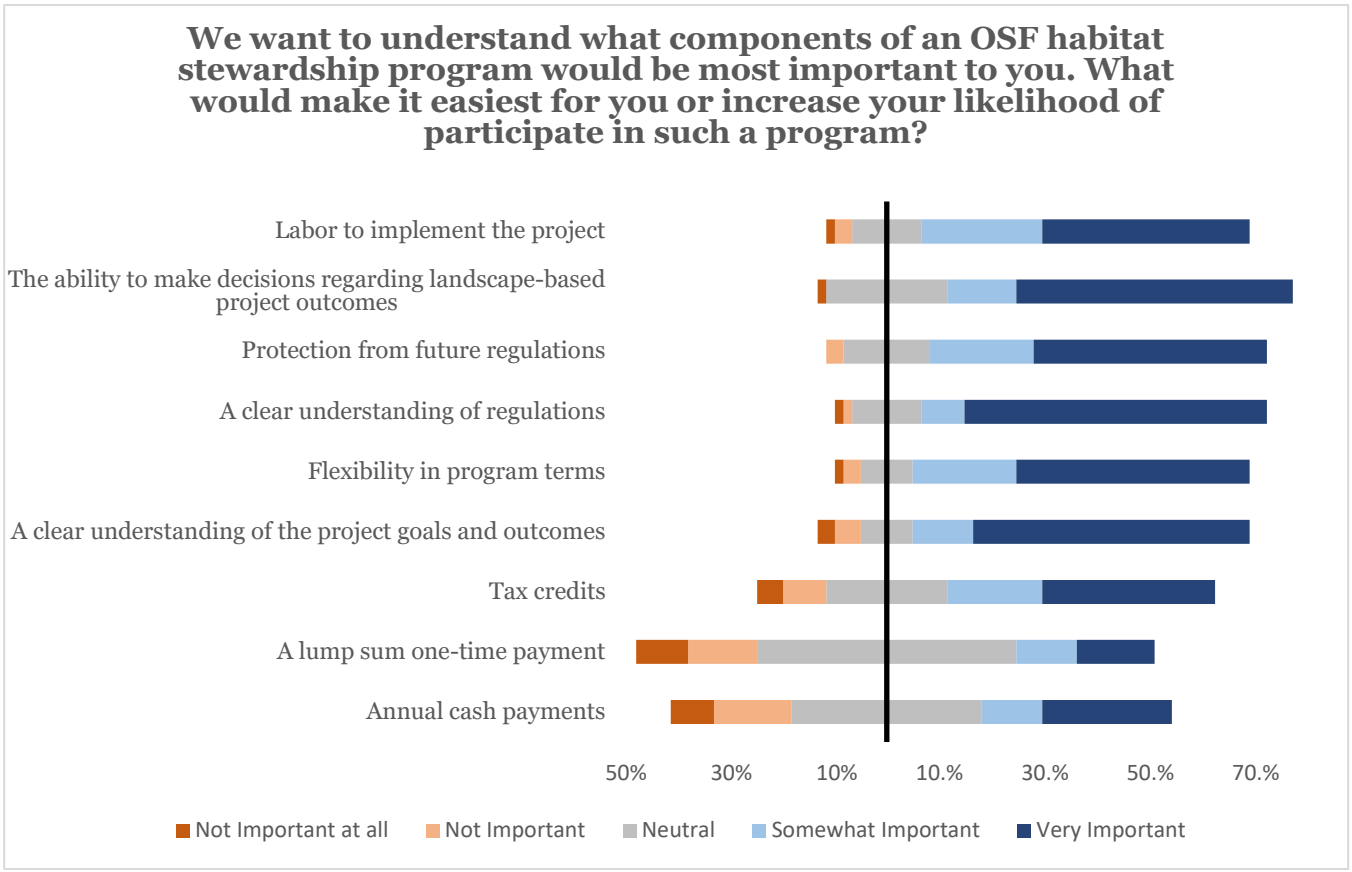


Figure 9. Survey response results (%) regarding what may motivate residents may to participate in an OSF conservation program.

Table 10. Desired OSF Program Features

Theme	Description	Frequency
Understanding of Project Outcomes	Respondents shared the importance of understanding project steps, goals, intended and potential outcomes before beginning.	29%
Property Rights Retention	Respondents shared the importance of maintaining autonomy over their property.	11%
Collaboration, Trust, and Transparency	Respondents shared the importance of collaboration, trust, and transparency between conservation organizations and government agencies.	9%
Property Value Protection	Respondents shared the importance of maintaining their property value.	8%
Compensation	Respondents shared the importance of having some sort of compensation or payment for participation.	6%

Knowledge that it Supports Healthy Habitat and Wildlife	Respondents shared the importance of knowing that the project would results in healthy habitat that supports OSF and other wildlife.	4%
Labor to Implement the Project	Respondents shared the importance of having physical labor to implement projects.	3%
Protection from Regulation	Respondents shared the importance of having protection from laws and regulations.	1%
Tax Breaks	Respondents shared the importance of financial incentives like tax breaks.	1%
None	Respondents shared that there wasn't anything that would motivate them to participate.	6%

Table 10. Themes, description of themes, and frequency of themes (%) identified by survey participants regarding desired OSF conservation program features. A transcription of written comments can be found in appendix B.

How do preferred program features and participation barriers differ across willingness-levels to participate in OSF habitat programs?

In general, increasing willingness to enroll in a habitat stewardship program for OSF was positively associated with the perceived importance for all potential program features and negatively associated with management barriers (Figure 7). The importance for land use plans and goals as a decision-making factor was the sole barrier that differed for people who were "likely" versus "very likely" to enroll in a habitat program. Otherwise, loss of property value, concerns about regulations and laws, and land agricultural variability were all important factors for residents who were not likely to enroll in a program. Respondents who selected that they were not likely to participate in a habitat program also selected that concern about government involvement was a very important factor in their decision-making process. Likewise, protection from future regulations was the only program feature that was scored as somewhat or very important for people who were unlikely to participate. A clear understanding of the project goals and outcomes, flexibility in program terms, and a clear understanding of regulations were all perceived as important for those who were considering enrollment but were not "very likely" to be willing to enroll.

5.3.5 Collaborative Conservation

Trust—or the lack thereof—in government agencies was reoccurring theme throughout the survey, indicating a significant barrier to address for OSF conservation in the region. Survey participants were asked to rate the extent they trust conservation organizations and agencies in our region. Community or grassroot organizations, non-profit or environmental organizations, and local-level conservation agencies had the highest level of trust from respondents (Figure 10).

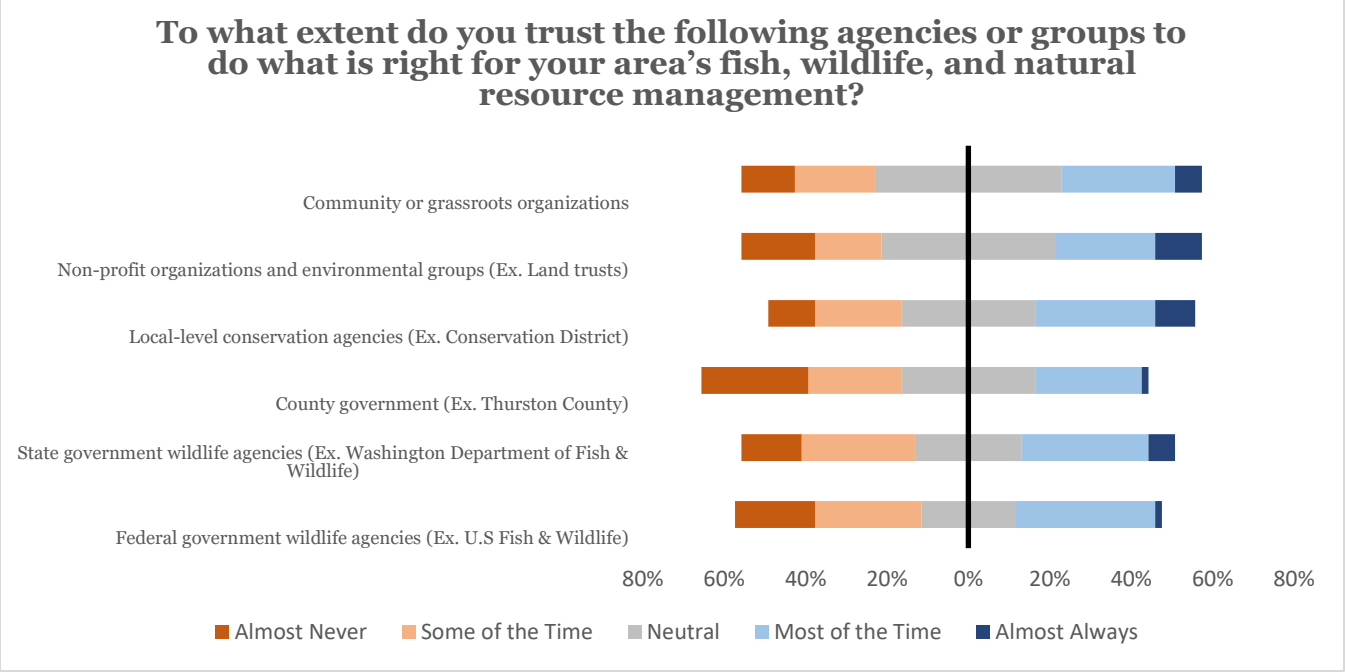


Figure 10. Survey response results (%) regarding residents' trust in agencies and organizations to do what is right for wildlife and natural resources.

We also asked survey respondents to share the organization or agency they would be most interested in working with on OSF conservation in the region. The most common response was 'none' (11%), reinforcing the current relationship challenges that exist between Thurston County residents and conservation entities. Of the entities specifically called out, the 'Washington Department of Fish and Wildlife' (8%) and 'Thurston Conservation District' (8%) were identified most often (Table 11).

Table 11. Desired Organization or Agency Partner

Organization	Level	Frequency
None*	-	11%
Washington Department of Fish and Wildlife	State Agency	8%
Thurston Conservation District	Local Agency	8%
Unsure*	-	8%
Other*	-	8%
Capitol Land Trust	Local Non-profit	6%
U.S Fish and Wildlife Service	Federal Agency	4%
Department of Natural Resources	State Agency	3%
Community Farmland Trust	Local Non-profit	1%
Natural Resource Conservation Service	Federal Agency	1%
Washington Farm Forestry Association	State Non-profit	1%

Washington Wildlife Federation	State Non-profit	1%
*Participants whose responses were categorized as "None" shared that they were no interested in working with any organizations or agencies. Participants whose responses were categorized as "Unsure" were not sure which organizations participated in this type of work. Participants whose responses were categorized as "Other" listed different organizations not listed by any other participant.		

Table 11. Organizaation, level of organizations, and frequency of organizations (%) identified by survey participants regarding preferred conservation partners. A transcription of written comments can be found in appendix B.

We wanted to further understand what organizations or agencies do to be better partners with private landowners. 'Respect' (22%) and 'communication' (21%) were the top needs identified again reinforcing the need for a focus on building relationship between residents and conservation entities (Table 12).

Table 12. Identified Needs in Collaborative Partnerships	
Theme	**Frequency**
Respect	22%
Communication	21%
Advocate	9%
Transparency	6%
Collaborate	4%
Support	3%
None	1%

Table 12. Themes and frequency of themes (%) identified by survey participants regarding what organizations and agencies can do to be better conservation partners.

6. CONCLUSION

6.1 Main Takeaways

Together, Thurston Conservation District, Washington Department of Fish and Wildlife, and the U.S. Fish and Wildlife Service's cross-agency collaboration to meet the shared goal of better understanding habitat stewardship for OSF on privately held lands to advance OSF habitat restoration. Our collaboration has culminated into the co-development of a habitat suitability model, an educational workshop and outreach materials, listening sessions, and a community survey. The success of our engagement approach to better understand the community is evidenced through an increase in the number of properties that the U.S. Fish and Wildlife Service surveyed for OSF on, which rose from 4 to 17 over the project duration.

During the listening sessions, most participants indicated that regulatory concerns and limits to their decision-making authority on their property were both barriers to participating in any OSF conservation programs. Feedback on current efforts focused on improving communication and relationships, asking for more focus on "listening directly to residents and their needs". Additionally, it was also discovered that although financial support is appreciated, money alone was not necessarily a motivating program feature in the absence of regulatory assurances or strong relationships between conservation agencies and the community.

Like the listening sessions, survey respondents expressed concerns about potential limits to their ability to make decisions on their property. Protection from future regulations was the only motivating feature that people who were unlikely to participate in conservation programs indicated might change their mind about enrollment. However, no single feature was viewed as a priority or motivating factor to an overwhelming majority of respondents, highlighting the need to diversify both the structure and communication of a private lands' habitat or conservation program. Additionally, the survey results showed that awareness and knowledge level shape attitudes towards OSF; with attitudes about OSF further defined by trust in the federal government and broad beliefs about the ESA, which together drive willingness to participate in OSF conservation on private lands in Thurston County.

6.2 Management Implications and Next Steps

The findings from our project emphasize the cumulative impacts of creating shared learning opportunities alongside the community, building mutual trust, and providing regulatory assurances. These factors will be essential considerations for any regionally specific programs developed to support OSF and their habitat on privately held land.

(1) This research shows that positive attitudes towards OSF built through awareness about the species are positively correlated with willingness to participate in OSF conservation. To continue engaging with Thurston County residents in on-the-ground conservation there must be continued and frequent education and engagement opportunities. This could include, but is not limited to workshops, webinars, and the

development of outreach materials. This could also include support and guidance offered through one-on-one site visits by restoration practitioners and species experts.

(2) Trust in the federal government was an underlying driver of willingness to enroll in OSF conservation programs. Federal agencies (as well as conservation agencies at local and state levels) can work to build trust with the community using a multi-faceted approach (Stern and Coleman, 2015). For instance, agency staff can focus on building trust through (1) continued demonstrations of competence in their management actions (known as rational trust), (2) positive social interactions and actively listening to resident's feedback, needs, and concerns (known as affinitive trust), and (3) the establishment of fair and transparent regulatory processes and policies (known as systems-based trust). These three dimensions can be further bolstered by opening learning spaces for agency staff and community members to iteratively exchange knowledge that actively informs program design (Stern et al., 2021), as exemplified throughout our project.

(3) In addition, the findings outline the need residents have for regulatory assurances. Participants consistently shared that regulations and loss of decision making authority were barriers to conserving OSF on their property. Protection from future regulations was the only motivating feature that people who were unlikely to participate in conservation programs indicated might change their mind about enrollment. This suggests the need to pursue avenues that protect residents from future regulations. This process could be supported through the development of a Safe Harbor agreement.

Lastly, further research is needed to gain a deeper understanding of what might motivate Thurston County residents to participate in OSF conservation, since our project only asked about willingness to enroll and did not measure actual enrollment.

6.3 Conclusion

The information collected is a vital first step to understanding the feasibility of future conservation strategies for OSF, including expanding habitat stewardship program and species translocation on private properties in Thurston County. This report highlights the need to create a program that fits the needs of Thurston County residents, including (1) increasing knowledge through engagement opportunities, (2) building trust, and (3) and lays out first steps to further engage with residents in this region. Further research is needed to continue exploring how to collaborate on OSF conservation with Thurston County residents. This could be done through a series of one-on-one conversations or selected focus group events. It is also clear that raising awareness levels and building relationships based on trust through these types of engagement events are important to build community willingness. Continued educational and engagement opportunities are vital to keeping this conversation in the forefront of community members' minds, as well as to make sure that any future conservation programs are built to be salient and durable. Moving into the future, it is vital to continue collective co-agency collaboration on OSF conservation with Thurston County residents. Furthermore, our project serves as a collaborative framework for other species in the region, we are excited to continue to work together and alongside the community for the future of wildlife conservation.

REFERENCES

Aquatic Species Restoration Plan Steering Committee. 2019. Chehalis Basin Strategy Aquatic Species Restoration Plan. *Washington State Department of Ecology*. 19-13-002

Bennett, D., Nielsen-Pincus, M., Ellison, A., Pomeroy, A., Burright, H., Gosnel, H., Moseley, C., Gwin, L. 2014. Barriers and opportunities for increasing landowner participation in conservation programs in the interior northwest. *University of Oregon*. Retrieved November 25, 2022, from https://scholarsbank.uoregon.edu/xmlui/bitstream/handle/1794/19385/WP_49.pdf;sequence=1

Brown, T. C. (1984). The concept of value in resource allocation. *Land economics*, *60*(3), 231-246.

Elmore W. and B. Kauffman. 1994. Riparian and watershed system: Degradation and restoration, Pp. 212-231 In Vavra M., W.A. Laycock, and R.D. Pieper RD (editors), Ecological Implications of Livestock Herbivory in the West. Society for Range Management, Denver, Colorado. 297 pp.

Hallock, L. E. 2013. Oregon Spotted Frog recovery plan, State of Washington (DRAFT). *Washington Department of Fish and Wildlife, 1-83*. *https://wdfw.wa.gov/sites/default/files/publications/01505/wdfw01505.pdf*

Lambert, M., Tyson J., Hougan H., Perry K. 2024. Translocation Feasibility Literature Review for Oregon Spotted Frogs. Report in preparation. *Washington Department of Fish and Wildlife*.

Langpap, C. 2004. Conservation incentives programs for endangered species: An analysis of landowner participation. *Land Economics,* 80(3), 375-388

Licht, L.E. 1974. Survival of embryos, tadpoles, and adults of the frogs *Rana aurora aurora* and *Rana pretiosa pretiosa* sympatric in southwestern British Columbia. *Canadian Journal of Zoology* 52(5):613-627.

O'Brien, R. S. M., Dayer, A. A., & Hopkins, W. A. (2021). Understanding landowner decisions regarding access to private land for conservation research. *Conservation Science and Practice*, *3*(11), e522. https://doi.org/10.1111/csp2.522.

Stern, M. J., Briske, D. D., & Meadow, A. M. (2021). Opening learning spaces to create actionable knowledge for conservation. *Conservation Science and Practice*, *3*(5), e378.

Stern, M. J., & Coleman, K. J. (2015). The multidimensionality of trust: Applications in collaborative natural resource management. Society & Natural Resources, 28(2), 117-132.

Thurston County. 2022. Thurston County Habitat Conservation Plan. Thurston County Community Planning and Economic Development Department. https://www.fws.gov/sites/default/files/documents/Thurston%20County%20HCP_final.pdf

U.S Fish and Wildlife Service. 2016. Endangered and threatened wildlife and plants: Designation of critical habitat for the Oregon spotted frog. *Federal Register,* 2933629396. *https://www.federalregister.gov/documents/2016/05/11/2016-10712/endangered-and-threatened-wildlife-and-plants-designation-of-critical-habitat-for-the-oregonspottedfrog*

U.S. Fish and Wildlife Service. 2023. Draft Recovery Plan for the Oregon Spotted Frog (*Rana pretiosa*). Portland, Oregon. xi + 23 pages.

APPENDIX A

Survey Letter and Survey Questionnaire

Greetings!

We are reaching out to you because you are a resident of Thurston County to understand your perspectives on wildlife conservation in the region. The Black River Basin, where you live, is one of the last strongholds for Oregon spotted frog. Oregon spotted frog are a native amphibian you can only find in the Pacific Northwest but are quickly declining in population. There are many challenges these frogs face, such as the density of invasive plants, property development, and a changing climate. These all negatively impact Oregon spotted frog and their current habitat. Due to this species' decline, local organizations and agencies dedicated to protecting this species are looking for new ways to collaborate with private landowners to support Oregon spotted frogs and their habitat.

To understand how residents like you feel about collaboration on supporting Oregon spotted frogs, the Thurston Conservation District, a non-regulatory agency that promotes voluntary stewardship in Thurston County, is partnering with local organizations and agencies to learn more about your opinions and experience. By participating in this study, you can add your voice to the conversation about conserving wildlife such as Oregon spotted frogs in Thurston County

You are one of a small number of people chosen for this study and your response is important to us. We hope you take the time to fill out the enclosed questionnaire**.** All personal information will be kept confidential, and participation is voluntary. Aggregated results from this research will be made publicly available and shared with local communities, organizations, government agencies, and scientists who are dedicated to including your concerns and priorities in regional conservation.

Enclosed is a survey questionnaire that asks about issues related to property stewardship and your environmental values, your opinions about federally listed species and the agencies tasked with protecting them, and what could potentially motivate you to help conserve suitable habitat for Oregon spotted frogs. The survey should take about 15 minutes to complete. We've provided a pre-stamped return envelope along with a discount card valid at Avenue Espresso as a token of appreciation for your time and participation.

Thurston Conservation District staff who review the questionnaire responses will maintain your confidentiality, as we do with all community members we work with. Personal identifiers will not be shared, published, or presented. If you choose to provide your contact information, staff from Thurston Conservation District will follow up to see how you would like to be involved further.

If you have questions or concerns about participating, please contact the Thurston Conservation District at 360-754-3588. If you have any questions about the study, please contact Kiana Sinner, at ksinner@thurstoncd.com. If for any reason you prefer not to participate in this study, please let us know by returning a blank questionnaire in the enclosed stamped envelope.

Please answer each question carefully and save any additional comments for the final page. If you would like to complete the questionnaire online visit https://form.jotform.com/TCDAdmin/ThurstonCounty or use the camera application on your phone or tablet to scan the QR code below.
We look forward to hearing back from you.

Sincerely,

Kiana Sinner
Thurston Conservation District
Education & Outreach Specialist
ksinner@thurstoncd.com

All responses to this questionnaire are optional and voluntary. If you are unsure of how to answer a question or would prefer not to answer, please leave that portion of the questionnaire blank. Once the questionnaire is complete, please submit it via the return envelope provided.

Section 1 of 3: Tell us about where you live

1. **What size is your property?**
   - ○ Less than 1 acre
   - ○ 1-5 acres
   - ○ 5-10 acres
   - ○ More than 10 acres

2. **Which, if any, of these descriptions apply to the property you live on?** *(Check all the apply)*
   - ○ I own the home I live in
   - ○ I rent the home I live in
   - ○ I have a creek/wetland/stream
   - ○ I have a wetland or rainy season wet area
   - ○ I practice agriculture (ex. Hay, vegetable, fruit, etc.)
   - ○ I have livestock (Ex. Cattle, sheep, horses, etc.)
   - ○ I live next to a pond/lake
   - ○ There is a conservation easement associated with the property
   - ○ I have Oregon spotted frog on my property
   - ○ Other _____

3.

Below we describe some of the factors you might prioritize when making decisions regarding your land. To what extent do you agree or disagree with each of the following statements about why you value the place you live? *I value this place because it provides…*	**Strongly Disagree**	**Disagree**	**Neutral**	**Agree**	**Strongly Agree**
a. Aesthetics: Special sights, sounds, or smells	○	○	○	○	○
b. Recreation: Hiking, hunting, fishing, or other outdoor activities	○	○	○	○	○
c. Wildlife: Habitat for wildlife unique to the Pacific Northwest	○	○	○	○	○
d. Agriculture: Land for farming and ranching	○	○	○	○	○
e. Home: A safe and comfortable home	○	○	○	○	○
f. Education: Opportunities to learn about the natural environment	○	○	○	○	○
g. Environmental Health: Clean air, soil, and water	○	○	○	○	○
h. Economic: My livelihood, ability to earn income, or property value	○	○	○	○	○
i. Legacy: Ability to pass on property to the next generation	○	○	○	○	○

4. **How would a listed or endangered species (ex. Oregon spotted frog) on your property affect the factors you indicated are important to you?** (*Ex. The benefit to environmental quality and habitat or the negative impact on property value)*

_____
_____
_____
_____
_____
_____

Section 2 of 3: Your perspectives on wildlife and wildlife management

5.

We would like to understand more about your views on wildlife species that risk becoming extinct (or disappearing), known as endangered species. How strongly do you disagree or agree with the following statements?	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
a. It is important to protect endangered species	○	○	○	○	○
b. Economic growth should be given priority over endangered species	○	○	○	○	○
c. Landowners have an obligation not to harm endangered species on their property	○	○	○	○	○
d. Landowners should be compensated for having endangered species on their property	○	○	○	○	○
e. I agree with the original intent of the Endangered Species Act	○	○	○	○	○

6.

To what extent do you trust the following agencies or groups to do what is right for your area's fish, wildlife, and natural resource management?	Almost Never	Some of the Time	Neutral	Most of the Time	Almost Always
a. Federal government wildlife agencies (Ex. U.S Fish & Wildlife)	○	○	○	○	○
b. State government wildlife agencies (Ex. Washington Department of Fish & Wildlife)	○	○	○	○	○
c. County government (Ex. Thurston County)	○	○	○	○	○
d. Local-level conservation agencies (Ex. Conservation District)	○	○	○	○	○
e. Non-profit organizations and environmental groups (Ex. Land trusts)	○	○	○	○	○
f. Community or grassroots organizations	○	○	○	○	○
g. Collaborative groups representing multiple partners	○	○	○	○	○

7. Please list the conservation or wildlife management organizations or agencies you prefer to work with:

_____

_____

8. What could organizations or agencies do to be better partners?

_____

_____

9.

Oregon spotted frogs are an endangered frog species native to areas in Thurston County. How familiar are you with this species?	Not at all Familiar	Not Familiar	Not sure	Familiar	Very Familiar
	○	○	○	○	○

10.

We would like to understand your beliefs about Oregon spotted frogs or similar frog species in the Pacific Northwest. To what extent do you agree or disagree with the following statements?	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
a. I like knowing that wildlife like Oregon spotted frogs are nearby, even if I don't always see them	○	○	○	○	○
b. The presence of wildlife species like Oregon spotted frogs on my property would be problematic	○	○	○	○	○
c. It is important to have healthy populations of wildlife like Oregon spotted frogs	○	○	○	○	○
d. Oregon spotted frogs are worth protecting	○	○	○	○	○

11.

We would like to understand the challenges or barriers you may face when considering participating in a program that aims to steward habitat for wildlife like Oregon spotted frogs. How important are the following factors for management decisions regarding your property?	Not Important at all	Not Important	Neutral	Somewhat Important	Very Important
a. Finances	○	○	○	○	○
b. Land use plans and goals	○	○	○	○	○
c. Friends, family, or neighbors' opinions	○	○	○	○	○
d. Land agricultural viability	○	○	○	○	○
e. Concerns about regulations and laws	○	○	○	○	○
f. Loss of property value	○	○	○	○	○
g. Insufficient incentives	○	○	○	○	○
h. Concern about government involvement	○	○	○	○	○
i. Lack of interest in conserving this species	○	○	○	○	○

12. What are the most significant barriers that would prevent you from participating in a program that aims to steward habitat for Oregon spotted frogs? *(Please provide any additional components not listed above)*

_____

_____

13. How willing would you be to enroll in a program where you were given support to provide habitat for relocated Oregon spotted frogs on your property?

○ Very unlikely
○ Unlikely
○ Neutral
○ Likely
○ Very Likely

14.

We want to understand what components of an Oregon spotted frog habitat stewardship program would be most important to you. If you answered likely or very likely to Question 13, what would make it easiest for you to participate in such a program? If you answered unlikely or very unlikely, what options would be most important to increase your likelihood of considering participation?	Not Important at all	Not Important	Neutral	Somewhat Important	Very Important
a. Annual cash payments	○	○	○	○	○
b. A lump sum one-time payment	○	○	○	○	○
c. Tax credits	○	○	○	○	○
d. A clear understanding of the project goals and outcomes	○	○	○	○	○
e. Flexibility in program terms (Ex. Duration of participation; ability to tailor an agreement to meet unique needs and land goals)	○	○	○	○	○
f. A clear understanding of regulations	○	○	○	○	○
g. Protection from future regulations	○	○	○	○	○
h. The ability to make decisions regarding landscape-based project outcomes	○	○	○	○	○
i. Labor to implement the project	○	○	○	○	○

15. In your opinion, what would be the most important factors that would increase your interest in participation in a program to support Oregon spotted frogs? *(Please provide any additional components not listed above)*

_____

_____

Section 3 of 3: About yourself
The last section of this survey is meant to better understand your background. Please only enter the information you are comfortable sharing.

16. **What is your occupation field?** *(Ex. Agriculture, healthcare, education)* _____

17. **What is the highest level of education you have completed?**

- ○ Some high school
- ○ High school graduate or GED
- ○ Two-year degree
- ○ Bachelor's degree
- ○ Master's degree
- ○ Doctorate degree
- ○ Professional or vocational certification

18. **What is your household size?** _____

19. **What is your household's annual income?** _____

20. **Which of the following best describes your racial, cultural, and/or ethnic background?** *(Check all that apply)*

- ○ White
- ○ Mexican, Mexican-American, Chicano, Latinx
- ○ Black or African American
- ○ Asian
- ○ American Indian or Alaska Native
- ○ Native Hawaiian or Pacific Islander
- ○ Describe_____

21. **What year were you born?** _____

22. **What is your gender?**

- ○ Male
- ○ Female
- ○ Non-binary

Do you have any additional information or comments you would like to share?

_____
_____
_____
_____
_____
_____
_____

If you are interested in participating in a follow-up conversation, please leave your contact information below.

APPENDIX B

Written Comments

All written comments received by survey respondents are transcribed below, results from survey coding can be found in section 5. Personal identifying information has been removed from all written comments. Most comments were handwritten and at times were not legible. Portions of written comments that were not able to be transcribed are marked "__". Minor spelling and grammar errors have been corrected for readability.

How would a listed or endangered species (ex. Oregon spotted frog) on your property affect the factors you indicated are important to you*? (Ex. The benefit to environmental quality and habitat or the negative impact on property value)*
Habitat is maintained nature on our wetland area. If there are species such as spotted frogs, then our efforts to keep the wetland natural will work. What I am NOT open to are outside people such as biologists coming on and __ and__ My __/access/or use of my property to do 'research'. I've seen this occur before with other friends/families property and I do not agree with it.
Limits availability to develop property. Negative impact on value of home/property.
No effect, only positive.
A listed endangered species would benefit the habitat for wildlife quality.
All of nature is important to me and gives me pleasure to be able to keep the environment I maintain safe to keep enjoying the wildlife that wander here.
We believe in finding ways to do both. We will pass on our property, but we also want to pass on a healthy planet.
This would put more restrictions on what we are able/allowed to do with our own property. I don't value a frog enough to give up property decision making any more than we already have to.
If there is an endangered species the government limits what you can do with your property - which isn't right. Most landowners like me protect our land and care for the animals and pond life. If the government is going to limit use, they do need to fairly compensate.
It's a frog, hopefully no impact on the usage of the land.
we are strongly environmentally conscious and have to stop emphasizing property or financial values. Health needs to come first, both for us, the wildlife, and all wildlife. We must keep intermittent preserves or green belts between suburban developments, that's not happening. I hope this is not another appeasement to make us think something will be done. because I have filled in these questionnaires since the 1950's. I have always said save the most fertile land for agriculture and now all-around Olympia, Lacey, Tumwater it is gone. Chambers Creek Basin is a perfect example. Schilters, williams, fuller ex.

I would be concerned about property value and ability to harvest timber.
I would feel really fortunate that a spotted frog was found on my property. I see a lot of wildlife in and around our creek including Coho salmon spawning in the fall. There are otters, an occasional beaver, blue herons and a number of other birds. Also, a black bear occasionally.
I need to learn more.
Would not affect.
Mud minnow
How it would impact my land use and my property value.
We spent 12 years doing environmental clean-up work - finally got cleared by Ecology.
I live along Beaver Creek and hope that eventually I can plant trees to support the creek bed. It has lots of canary grass right now. I haven't heard frogs for a couple of years, but I hope improving conditions along the creek will help them. I can't afford the trees now but hope to in the future. I'd also like to plant hedge around the pasture with plants to attract birds, bees, etc.
We already have OSF here. We love the biodiversity the wetlands offer. We also value agriculture & want to raise our own chickens/goats in the future, so would still like to have the freedom to do so.
How much impact? I'll bind, but this needs a better system than the pocket gopher.
All.
We may have to let grass/weeds grow longer in certain areas than we usually do now- that can impact the aesthetics of the property. It may impact what animals we are allowed to raise on the property.
No effect, we love hearing the frogs.
Negative impact on property value; restrictions on use.
We have spotted frogs :)
Would protect from government easement encroachment; Would possibly protect from trespassers fishing + hunting + poaching.
I would not make decisions for my property based on a single species. My family's use of the land and our property value far outweighs preserving a frog's habitat.

None.
Negative property values; loss of freedom of choice for land use!
We are not in the black river basin. We do not have Oregon spotted frogs. We do not try to say we have! Any more of this foolishness will destroy are family farm of over seventy years! We are now fighting pocket gophers being dropped off next door at the Thurston county dept. never have we had gophers in seventy years of living here!
Very little offed on my use of property as I have no wetland or streams. I do enjoy the frog chorus from a nearly ditch draining a golf course. Our lot is unfenced, so we have lots of deer visits. Our lot is treed with many varieties of birds.
Not at all.
Get rid of the frogs!
My approach is live and let live, my property has an abundance of invasive plants that I'm not allowed to remove so the frogs are on their own.
Increased challenge to manage the forest; increased permit challenges; improved wildlife value.
Property value.
One of my main concerns about the area is human population density. Dense human population ruins habitat and wildlife plummets from that. Any listing of endangered species slows down the "housing for profit" industry, which helps wildlife.
I'm afraid it would have a negative impact on the property value (that is the value that someone else is willing to pay me for the property) as well as a negative impact on the potential income received from the property (that is my ability to harvest timber). For far too long, small woodland owners have been on the short end of the stick when it comes to land grabs. We get to use less and less of our private property while not being fairly compensated for the land grab. I'm interested in providing habitat for creatures, but the government has shown an insatiable appetite for ever increasing buffers, etc. There appears to be no end.
It would not affect me much at all.
Negative impact on property value and diminished ability to use land for recreation. Limited ability to remodel or expand due to increased restrictions on building.
Don't know but don't expect harm to come from it.
Negative on everything that I value.
We would love to help wildlife by creating safe habitat.

Although I'd hate to see my property value decline, providing safety, or relief for an endangered species is, to me, more important.
We have OSF on site and are working to enhance the habitat.
I would intrinsically want to help and provide habitat for native flora and fauna. It would benefit the local ecosystem and the people that live here. I love the PNW for its natural beauty, clean air, and water. However, I would be concerned about the bureaucratic mess that often accompany these initiatives.
Negative impact on property value.
There are frogs of some kind that sing in the swamp at certain times of the year, which we find enjoyable. We would like to replace/extend some of the buildings on our property, but regulatory compliance for the regular wetland area is onerous enough I really would prefer it not to be added to. Our whole property might turn into a 'buffer' and become unusable.

*Table 13. Written responses to survey question four "*How would a listed or endangered species (ex. Oregon spotted frog) on your property affect the factors you indicated are important to you*? (Ex. The benefit to environmental quality and habitat or the negative impact on property value)*

Please list the conservation or wildlife management organizations or agencies you prefer to work with:
U.S Fish and Wildlife -agency that adheres to the 'North American' model of wildlife management.
Fish and wildlife.
Not sure.
Salmon creek.
Conservation district, state and local agencies.
No experience with any.
None. If a group needs me or my property- then can call and I am most often happy to work with them.
None.
South Sound Farmland Trust (Marcie Cleaver) and Capitol Land Trust.
DNR and Thurston County Conservation District.
Thurston Conservation District.
Washington Department of Fish and Wildlife and Thurston Conservation District.
WDFW.
County, state, and local agencies.
Land trusts, native tribes, Utah wilderness assoc., Sierra Club & more non-profit conservation groups.

Open to working with any organization;
WWF.
I think orgs like USFW and WDFW do a good job on specifics but don't have a holistic view.
Capital LAND Trust.
None.
None.
N/A.
None.
Capital Land Trust
Get rid of them!
WDFW
Capital Land Trust.
I would like to have something to list here, but honestly, I don't know.
Washington Farm Forestry Association. They are a voice of reason against endless burdensome regulation. I have had a good relationship with DNR (Julie Sackett) and NRCS program (Frank Curtain).
None of them. There's big money behind every group.
I have never worked with any of them. I moved here only two years ago.
Educational and non-profit organizations. Groups that give you the knowledge and tools on how to protect the environment. Also, the more local the better. I would be hesitant to work with lawmakers, governments, and other regulatory agencies. Any group that restricts, fines, or otherwise works against homeowners.

I want to be left alone to let nature manage itself.
It doesn't matter, as long as there aren't too many. Conflicting requirements across agencies can be a big problem.

*Table 14. Written responses to survey question seven "*Please list the conservation or wildlife management organizations or agencies you prefer to work with:*"*

What could organizations or agencies do to be better partners?
Be more transparent of their intentions and "__" Human rights/laws.
Use science to drive policymaking, not politics.
Communicate and offer support and help.
To be a strong advocate for safe environments for our wildlife.
More transparency and presence to understand homeowners' feelings about commercial encroachment on rural lands.
Realize we are the tax paying property owners! Should have ultimate say over our property.
For example: I have never heard of these frogs or that they are endangered, I have a lot of ponds - no agency has ever called to ask if they could bring frogs and hopefully repopulate them.
Be respectful.
Have a greater public voice especially in schools and in the theaters.
Improve communication.
Communicating a clearer understanding of project goals and outcomes.
More public participation; faster response to questions and concerns.
Be transparent with stakeholders; increase communications regarding decision timelines.
Stay focused on the core mission and don't chase social trends.
Not exist. Stop micromanaging private landowners.

Protect property rights/values.
None.
Not run through citizens property; take into consideration the owner's needs and wants.
Offer more 1-day workshops for landowners.
Leave me alone! I do not need you!
Leave property owners alone.
Lister better.
Increase communication, facilitate collaborative partnerships, improve efficiencies to accelerate action (improve conservation results).
Treat others like you want to be treated.
Communicate clearly and set well defined goals with limits, then only change those with consultation involving the affect populace.
Treat landowners as if they own the land, because they do. Find ways to alleviate concerns related to endless land grabs and stop locking up simple permitting processes for long periods.
Show landowners ways to participate.
I don't know.
Education and support over regulations. People should know why they are protecting specific species, learn how to make an impact, and be provided support (tools, education, advisors, tax exemptions, etc.) I had no idea what a spotted frog was before this, but now I'm interested and more willing to do my part. Fear of fines, regulations, or zoning rules does not build trust. Especially when someone is unfamiliar that these restrictions exist in the first place. This incentivizes people to stay willfully ignorant and/or shut up. There will always be bad actors, but I believe that most people want to do good.
Take politics and confiscation out of it.

Regulatory harmonization.

Table 15. Written responses to survey question seven "What could organizations or agencies do to be better partners?"

What are the most significant barriers that would prevent you from participating in a program that aims to steward habitat for Oregon spotted frogs? (Please provide any additional components not listed above)
I will not allow access to my property for the very reason that I've had families have their own rights restricted because of finding the pocket gopher.
Stewardship of my property is very important to me, but I don't want the government to tell me what I can or can't do based on an extreme liberal ideology.
If it kept landowners from using their land.
That my overall wellbeing and enjoyment of my land would be disrupted.
Based on where the areas frogs may be on my property as long as we can still walk and enjoy our land, we will be ok.
Anything that puts the value of a frog above owner's property rights is unacceptable.
Government involvement limiting what I can do with my property.
Land use restrictions - lack of tax breaks if restrictions come.
Only if I could not run cattle on the land, or cut hay, although the pond areas are only present in fall, winter, and spring.
Not suitable habitat.
I would need to understand the restrictions of present land use. Not sure our property would be big enough or appropriate.
Trust of government.
Working together to focus on the goals of the project with minimal disruption to our privacy.
We are selling the property. Land use zoning is extremely important.
Phalaris arundinacea. Lack of understanding regarding connectivity and management of water in Black River Watershed.

I don't know what it would involve.
Regulations on managing our property or owning animals that would go against how we currently do so and what we have.
Unknown.
Government involvement.
My belief is that my property is not anyone's business but mine.
N/A.
Overbearing government, taking away our rights.
Government control over my land even more than it is now!
Lack of knowledge.
No suitable habitat on our lot.
We, the owners of the land, do not want or need you.
Loss of freedom to do what I want with my property that I worked all my life for.
I do not trust any group to look out for our best interest.
Don’t want anyone telling me what to do on my property.
The back 3 acres of my land are used for grazing by my neighbors. How much land do frogs need. We have frogs on our property. Would those frogs be displaced?
Terraforming a patch of the riverbank will be hard physical work and I'm getting old and creaky.
Afraid of a gotcha. Inability to use my property for personal enjoyment and economic benefit.

Wetland dry out in the summer. We only have a small pond in the front yard with water year-round.
Not sure if there are any on my property. Someone from your group came to look but the terrain & tall grass made it too difficult at that time.
Honestly, I have no idea of what that might entail.
Funding to continue maintaining the habitat enhancement project.
Time and money would be the biggest barrier. It is difficult managing the property already. Next would be regulations and laws that may negatively impact my property.
Government & private entity over reach.
It depends entirely on what the plan is. The wetland isn't useful or accessible for most of the year and is already a fine place for frogs, but buffers have a significant impact on the rest of the property.

Table 16. Written responses to survey question twelve "What are the most significant barriers that would prevent you from participating in a program that aims to steward habitat for Oregon spotted frogs? (Please provide any additional components not listed above)"

In your opinion, what would be the most important factors that would increase your interest in participation in a program to support Oregon spotted frogs? (Please provide any additional components not listed above)
Written directories or an action plan for the management of a species or private land as it pertains to owner rights.
The program should be structured in a way that will not destroy the value of the property I've invested in for many years. If it does negatively impact, the landowners should be compensated.
If it helped the frog and property.
To not lessen my overall enjoyment of my property.
Transparency, partnership, understanding.
N/A.
Full understanding of expectation from both sides in regard to regulations.
Just to support the species.
More information.
I would like the learning opportunity for my grandchildren and future generations on how they helped a species that was endangered not become extinct.
If our land is appropriate for this study.
Trust.
A clear understanding of project goals and outcomes - number one.
Sitting down and discussing goals, processes, and regulations. Having at least some labor provided. Being able to participate hands on with the process (and include our kids if possible!).
I would have to know what the program would require me to do.

A clear explanation of what it entails, especially financially.
Understanding the plan & scope for my property.
Mitigation of property value degeneration.
Having a choice in doing it or choosing not.
None.
Protection of property values/rights.
Have no interest.
The government better not MAKE my property part of any program.
Education.
Current on projected suitable habitat on our lot.
Getting rid of your office. Your work is not needed and a waste of tax money.
The sole control over my own property.
My ability to control my property.
Tax breaks - our taxes are way too high.
How long would the project last + how long would it be supported? Who is writing the regulations will I have input. I get so tired spending thousands of dollars on studies you can ask any 1st grader the answers with no study.
Clear and well defined limits and parameters as well as education about our specific ecosystem locally, and the species who live here or are - supposed to- live here, animals plants and their interactions.
Help to dig a permanent pond in our wetland.

A clear plan.
Funding.
The easiest would be an educational email or pamphlet describing what the Oregon spotted frog is and how to protect it. Answering questions like: Should I add certain native plants to my property, should I think about adding a wildlife pond, should I avoid certain household chemicals? If a site visit is required, then a clear understanding of how this visit may impact my property. Again, is it a supportive and informational visit, or are people here to zone, regulate, and create laws on my property?
Deregulation that would allow species to flourish on its own.
It really depends on what the plan entails and what frog area looks like under the plan. Some wetland areas can be a big eyesore even if they are performing an important function.

Table 16. Written responses to survey question 15 "In your opinion, what would be the most important factors that would increase your interest in participation in a program to support Oregon spotted frogs? (Please provide any additional components not listed above)"

Do you have any additional information or comments you would like to share?
I take my land management seriously and want, very much, to preserve my little slice of heaven on earth to its full potential for conservation of wildlife and undeveloped space for their protection.
Please reach out to us we are happy to help.
Economic growth should be given priority over endangered species (Comment: done right they can both exist); I agree with the original intent of the endangered species act (comment: If the intent is to protect the species than I agree but not with a lot of the other “pieces” attached to the act); comment: Conservation is important.
Again, I hope this is not a wait as it has been so many times in the past. Save the farmland and wildlife. Some people say we have enough trees. All you need to do is drive out in the country. No, we need right intermittently between development. Act now it is almost too late. When is the 2024 plant sale? We don't think our property is best suited since the County's ditch drains onto a small portion of our property and isn't wet year-round.
I really value my land and the fact it has a creek. That is what I fell in love with. I enjoy seeing wildlife. I only use tools to maintain the property - no chemicals. We have well water, and I feel it's very important to not add more stress to the environment by using dangerous chemicals.
I appreciate TCD's help with meeting WDFW representatives Nick George and Cassie Doll to evaluate my property and its wetlands. Thank you!
Old and tired! Grandkids rule.
My wife and I bought a 10-acre property in Thurston county about 4 years ago for retirement. We planned on living the rest of our lives here. We initiated remodeling our house to make it compatible with our lives as we get older, i.e. wheelchair access, wide doors, etc. We had architectural designs done and have been trying for over two years to get through permitting we thought we were almost done and ready for construction when our builder told us that our permit was held up because of some "spotted frog issue". We haven't been able to contact anyone yet on just what the issue is about. Our land is on a hill and there is no wetland near our house where we planned to remodel. A game biologist that we consulted seemed surprised that this was an issue for us as he says there is no habitat for frogs in our area. Sorry, but I just can't be too sympathetic about your frogs since this bureaucratic ruling is directly affecting our quality of life.
I support the conservation of species and the land.
I used to work for Sustainability in Prisons Project (nursery program), so I am familiar with OSF & supportive of population improvement. Phalaris arundinacea is a problem on our property - we are interested in learning if new control methods have been developed --> not sure if you've reached out to our neighbors, but they would probably be interested in this.
Stop micromanaging landowners.
I can't afford any out-of-pocket costs. 2. no additional restrictions on land use beyond what already exist for beaver creek/seasonal wetlands. 3. Clear, binding legal parameters pertain to land use. 4. no restrictions that would lower property values or further restrict land use. 5. I would support any restoration for salmon/ frog habitat on beaver creek.

We have been regulated to death. Been on this farm for 71 years. Always kept if clean and have polluted nothing. As usual farmers are the best rewards of the land.
Yes, helping nature but not at the expense of my rights.
My income, age, and nationality should not be important nor should my income.
Our subdivision has many drainage ditches - information on __ their purpose while improving wildlife habitat would help our community.
Preserve owners property rights. History tells us when homeowners are subject to government regulation, they lose.
I live in Winlock WA but filled this out on behalf of Port Blakely who owns land on Delphi Road along the Black River.
There are electrical power lines running across my property that place some restrictions on use. We have 3 kinds of frogs already! A small frog about the size of a nickel, a brown frog that sings a lot at night, and a large brown and black frog that eats goldfish out of our garden pond. I find it interesting that first it was the spotted owl and now the spotted frog. How about a study to protect spotted old people.
I love my home. I live here because I need the natural world around my as a buffer. Wildlife of all kinds makes me happy. I want more of it, so I'm focusing on habitat. I wish the bullfrogs had not eaten all of the turtles. We maintain areas that provide cover, food, housing, and water to many types of wildlife. If you have rabbits and mice, the owls eat well. Berries and nuts, and a safe place to hide to eat them gives you a strong stable population of owl food, etc. Frogs are a part of that.
My husband can have different opinions.
I'm interested in this projects and other like it. I'm trying to convert an old Christmas tree farm and pastureland back to native habitat. I ordered hundreds of trees and plants from you guys last year. Unfortunately, only about a third of them survived, but I'll try again next year.

Table 16. Written responses to open ended opportunity for survey participants to share final information or comments.

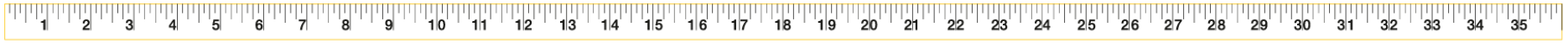
APPENDIX C

Outreach Materials

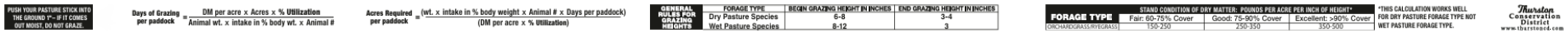
OSF Conservation Grazing Stick

The OSF conservation grazing stick was printed on wooden measure sticks using the designs below. This tool will be available to farmers grazing for the benefit of Oregon spotted frog in conjunction with technical assistance provided by local technical experts from organizations and agencies such as the conservation district, Washington Department of Fish and Wildlife, and U.S Fish and Wildlife. Additionally, a companion diagram was designed to support and provide guidance to farmers who are grazing for the benefit of OSF as well as showcase how to use the OSF conservation grazing stick effectively.

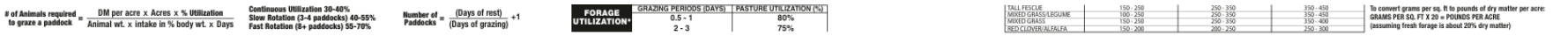
Side A



Side B



Side C



Side D

Figure 11. OSF Conservation Grazing Stick designs featuring a 3 ft measurement stick, forage utilization calculations, recommended grazing heights, rotational grazing calculations, and specific guidance for grazing in seasonally wet pastures for the benefit of OSF.

OSF Conservation Grazing Stick Companion Diagram

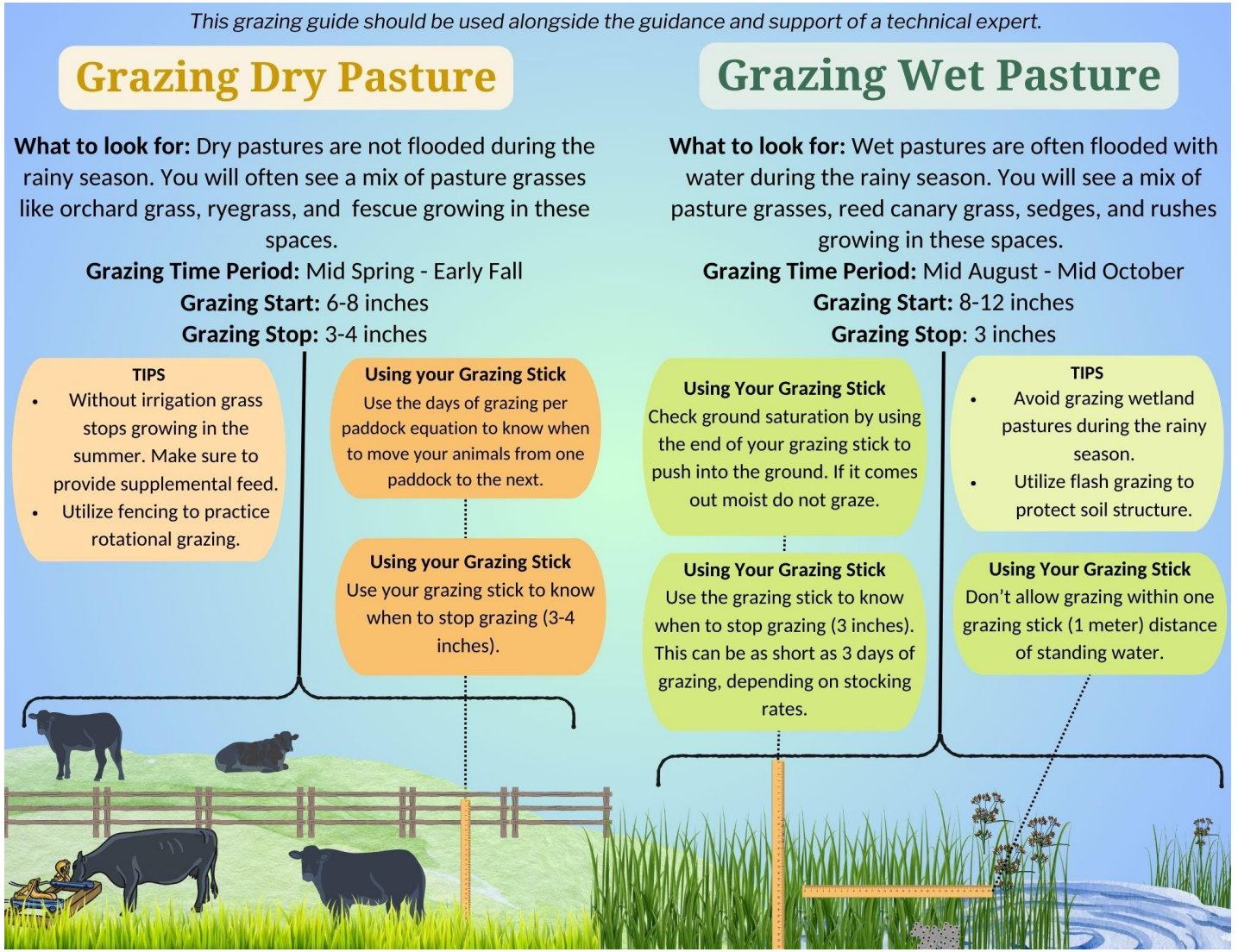


Figure 12. Front and back of OSF Conservation Grazing diagram featuring instructions for using the OSF conservation grazing stick and for grazing in seasonally wet pastures versus dry pastures.

Metal OSF Habitat Sign

Figure 13. Metal OSF habitat sign designed for Thurston County residents to display at the OSF conservation project sites.